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ORIGINAL ARTICLES.

THE PREVENTION OF DYSTOCIA DUE TO FETAL AND PELVIC DISPROPORTION.[1]

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LOOKING at the practice of obstetrics from a broad point of view, for the purpose of strengthening and improving its weaker parts, one cannot but be profoundly impressed with the importance of the subject of dystocia due to fetal and pelvic disproportion; painfully impressed with the careless inattention generally given it, and enthusiastically impressed with the possibilities of improvement in the management that will reward conscientious effort at prophylaxis. To such dystocia must be attributed a large proportion of obstetrical diseases and deaths. Exhaustive labors, consequent hemorrhages, sepsis, forceps, version, major operations, ruptures, lacerations, gynecological sequelæ, and all the possible injuries to the fetus, from cephalhematoma to death, make up a list that is almost the catalogue of obstetrical evils.

I wish to consider briefly the subject in two divisions. First, to what extent can we foresee the outcome of fetal passage through the maternal pelvis? Second, to what extent can we, by means of such foresight, prevent the evils that threaten?

In multiparæ, who should be considered apart from primiparæ, we have as aids to prognosis the previous history of labors, and in both classes parental characteristics, pelvimetry, fetal palpation, cephalometry and tentative engagement of the fetal head—Müller's test.

If a pregnant woman has had one or more children we should seek to learn what was the presentation, the length of time of the first stage of labor, when the amnion ruptured and why, how long a time it was from the beginning of regular and strong pains before delivery, what was the shape of the child's head when born, how much of a caput was formed, if forceps were used, and the weight of the child. It will be seen that the main purpose in these inquiries is to learn how near to obstruction the fetalo-pelvic proportions were. If the child weighed, for example, seven pounds and there was no head-molding, nor special effort in delivery, it would be very unlikely that there would be any obstructive difficulty in the coming labor, even although the child might prove larger by one pound. But, if marked molding and use of the forceps entered into the history, the coming labor would be classed as uncertain, for a larger child might not even engage at the brim.

There are, in some families, variations in the weights of successive children at birth of from one to three pounds, excluding immaturity of some of the children. But such extreme differences are very rare, and we can rely upon the rule of slight, but progressive increase of weight from youthful parentage up to thirty-five years and decrease thereafter. The problem of forecast in primiparæ is much more difficult, there being no labor-histories by which to gauge proportions.

Parental Characteristics.—It is quite as profound a statement that, as "a tree is known by its fruits," so is the fruit to be foreknown by the tree. General characteristics of parents is a very interesting study bearing on the size of offspring. In the lower animals, where definite strains are sharply defined it is a certainty what the physical characters will be in the young.

In man the tangled skein of cross-breeding greatly confuses the problem of offspring type. Regarding the physical characteristics of the parents I consider the bones as most helpful in forming a prognosis of fetal size at birth. The heaviest children are generally born of parents with large bones. The parents' features are massive, their wrists and ankles are large, and their weight is decided and is largely due to the bones. If with such parental structures there is a mutual family history of high intellectual development, we may expect large head diameters in the children at birth. The reverse of light frameworks holds good for smaller and more easily molded fetal heads. I shall refer again to this matter of the bones under pelvimetry. Where the parents are of opposite types, I believe the mother's characteristics will preponderate. The larger the number of members of a family who can be considered on both sides, the surer becomes the basis of estimate of what the fetus will be at birth. I believe that the father is not given due consideration as a rule. Perhaps, in hospital work, because he is an unknown quantity. Engelmann has stated that dystocia was greatly increased in the case of Umqua Indian women impregnated by white men.

Parental nutrition, more particularly that of the mother during pregnancy, has much to do with fetal size at birth. Prochownick's theory regarding diet, that the use of nitrogenous food from the beginning of the seventh month would so retard osseous growth as to avoid dystocia, no doubt has considerable truth in it, although we must feel that the fetus will generally act as a true parasite and get what it wants if there is any of it to the sacrifice of the mother's

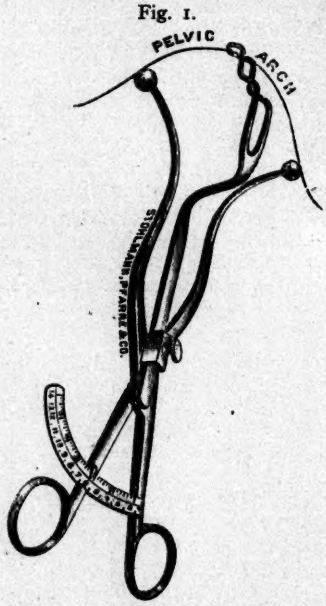
[1] Read before the Section on Obstetrics and Gynecology of the New York Academy of Medicine, April 26, 1900.

needs. Hard work and starvation are more apt to induce premature labors than smaller children at full term. Excess of fat in the mother increases the amount of soft tissue in the pelvic canal, but more materially causes dystocia in that the dynamic force in expulsion is weak. So, likewise will anemia, chlorosis, or other weakening conditions affect expulsion. Some women get muscularly weak, "soft," through the lack of exercise in the heavy months of pregnancy. The loss of *vis a tergo* is the equivalent of a large head.

Pelvimetry.—Pelvimetry partakes of both science and art, and is the basis of calculation of pelvic caliber; but it always includes the algebraic x in the equation. The external measurements are but an argument of probability.

It may be stated, as a rule, that we are more liable to error in estimate of the inlet diameters when the external measurements are large than

Fig. 1.



Pelvimeter.

when they are small. This for these reasons: (1) When the external measurements are under the average, or even what we consider proper proportion in a given case, our suspicion of coming trouble is aroused, and we make a very careful study of the case. When the measurements are large we are lulled into superficiality in internal examinations. (2) Large external measurements accompany heavy bony framework, and large, thick bones encroach further upon the pelvic caliber than light bones of the same outside dimensions. I have seen this markedly exemplified in some of my extreme cases of dystocia, and have been led thereby to give greater weight to what is stated here regarding the consideration of the skeleton in general.

To what extent should the external measurements determine the amount of care exercised in securing internal measurements? I can find but one answer—to no extent, so far as lessening the latter, but, in certain cases of asymmetry, they should extend the examination. But perhaps more will be accomplished generally if we do not make the standard too arbitrary. When a mother has had a satisfactory delivery-history we need not make thorough internal measurements. And, further, where we find the promontory beyond the reach of the second finger, and the tentative engagement of the fetal head satisfactory, it is not necessary to take all the internal measurements. When the plane of the symphysis lies out at the upper border, or in at the lower, as one pleases to express it, if this is not noted, we might conclude from the diameter of the diagonal conjugate that the vera is shortened, whereas just the reverse would be true. And conversely as regards the plane of the symphysis, the vera would be short just when the diagonal is long.

Measurements of the pelvic outlet, I believe, are not generally taken. Inattention to this will, although rarely, lead to unexpected trouble. The pelvis may be funnel-shaped, wide at the inlet and narrow at the outlet. I recall two cases, in one of which the child was delivered by Cæsarean section and in the other by symphysiotomy. In both the fetal head passed the brim without special difficulty. I know of no dyscrasia that should suggest this form of pelvic deformity. Clinically, we must always give attention to the width of the pubic arch, the interischial and coccygopubic diameters when examining for the diagonal conjugate.

Practice will generally enable one to suspect outlet-contraction at this time, and actual measurements may be taken. I take the liberty of exhibiting a pelvimeter which I had constructed for taking these measurements. With the upper bar in place the instrument measures the width of the pubic arch at a given level below the supremity of the arch, giving a purely arbitrary, but fixed plane of measurement. By removing the upper bar the internal diameters of the middle plane of the true pelvic basin—of the ischiæ and of the coccygopubic—can be taken with accuracy.

Abdominal Palpation.—This will enable us to only approximate the true dimensions of the fetus and particularly its head. This approximation will advance *pari passu* with practice. In cases of large pelvic space the fetus generally lies low in the inlet after the thirty-second week, but not always. In cases of contraction of the conjugata vera the head always lies high, is freely movable, even has a tendency to lie a little to the right or left of the center, and, because it lies high, is apt to increase the degree of anteversion of the uterus as a whole.

Cephalometry.—When all knowledge of pelvic dimension that our skill can obtain has been se-

cured, we have but one-half of the equation solved. The volume and diameters of the fetal head compose the other half. The variations in head diameter in different cases are not as great as those of the pelvis, but they are sufficient to require as approximate a measurement as we endeavor to obtain of the pelvis. The efforts of Ahlfeld to estimate head dimensions by measurement of the distance from coccyx to vertex, of Dubois by the length of pregnancy, and of Gönner and Bruyère by measurements of the fetal feet, have all proved useless. Perret claims that the biparietal diameter is 25 mm. less, in the average, than the occipitofrontal diameter, and that he can, with his cephalometer, secure the latter diameter with satisfactory accuracy. He palpates the head at the inlet in the ordinary manner and applies the tips of the instrument to what he decides to be the occipitofrontal diameter, notes the distance, and then pinches up the skin of the abdomen and subtracts its thickness, as determined by actual measurement, from the given diameter. He then subtracts 25 mm. from this, which gives the biparietal diameter. All of this assumes that the head lies in a normal balance between chin and occiput extension and that the occipitofrontal diameter can be palpated from above the pubes. As a rule this would be a fair assumption.

In certain patients, such as have thin abdominal walls and flaccid uteri, this measurement of the occipitofrontal diameter can be taken with accuracy. In those with tense uteri, which are distended by amniotic fluid, and thick, or tense abdominal walls, the degree of accuracy would be much less. Again, the variation in some cases between the occipitofrontal and biparietal ratio would be more or less than 25 mm.

Perret reports from the published cases of himself, Dubresay, Constans, Denys and Weill, the results in 186 examinations. In 36 of these the biparietal diameter, as estimated, was correct. In 140 the error was not greater than 5 mm. In 10 the discrepancy was over 5 mm. He suggests an *argumentum ad hominem* in stating that of these 10 cases 8 were in the list published by Denys, which might be taken to mean that the results depend upon individual skill. One case gave an error of 7 mm. due to the unfavorable condition of the patient. Taken at their face value, these results are remarkable and call for active and careful verification. In 94.6 per cent. the error was not over 5 mm.—a little less than one-fourth of an inch. Combining such head measurements with the accurate measurement of the conjugata vera that can be obtained with Hirst's pelvimeter should result in a long stride toward scientific accuracy in ascertaining pelvic and head diameters and proportions.

Müller's Test.—There are two methods of directly testing, during pregnancy, the question of engagement and passage of the head during labor. One, by placing the fingers of both hands above the pubes and pressing the head into the inlet, the other by holding the fingers of one hand against the head in the vagina, with the uterine wall between fingers and head, while the other hand presses the head down from above the pubes. In markedly contracted pelves the head stops absolutely when it comes against the brim. In the spacious pelvis the head is stopped gradually. There is, of course, every grade between these extremes of tentative engagement. The chief difficulty for the examiner is in estimating the effect of the soft parts in resisting in-pressure of the head. Here is where the results will largely depend upon the amount of practice one has had, and I believe that all experienced obstetricians will agree with me in the statement that very accurate opinions can be formed, not only as to absolute obstruction in extreme cases, but as to whether much, or little molding, will be required, if one has practised long and faithfully.

Lastly, it may be stated, that, where the lowest part of the presenting head reaches a plane on a level with the subpubic arch and parallel to the plane of the inlet, it may be expected to engage in labor.

Speaking from the standpoint of the specialist, of the obstetrician who has worked long and carefully to attain the utmost skill in diagnosis, is it not time for us to readjust our attitude toward this question of head and pelvis dystocia? Instead of being guided by the question of duration of pregnancy, a question that is so hard to solve with accuracy, should it not be our aim to place chief reliance, and much greater than heretofore, upon the physical examination? Estimation of the duration of pregnancy by calculation from the last menstruation, quickening, nausea and abdominal distention has always been exceedingly unsatisfactory, and can never possibly become accurate, owing to the variations in growth for a given period of gestation. We must learn to rely upon actual measurements and tentative engagement of the fetal head to determine, not the period of pregnancy, but the question of dystocia. Incidentally this would enable us to learn also of conditions that are the equivalent of longer time, such as hydrocephalus.

Any practical results from the above carefully-applied efforts to make early diagnoses of dystocia must obtain in either *the restriction of fetal growth, the induction of labor, or preparedness for obstruction in labor.*

The Restriction of Fetal Growth: Diet.—If, by means of diet, we can restrict the growth of the fetal body and retard ossification of the cranial bones during the last six weeks of gestation, and, at the same time, enable the child to escape the dangers of prematurity, that is, control the production of a small but mature child, we will secure the very best method obstetrics can devise for avoiding the dystocia due to fetal head and maternal pelvic disproportion.

Rowbotham seems to have been the first to have experimented in diet for the prevention of dystocia, publishing successful reports in 1841. He restricted the diet largely to vegetable acids

with the intention of preventing the formation of earthy salts. In 1889 Prochownick published a paper, "An Attempt to Replace Artificial Premature Delivery," in which a diet was advocated that proscribed entirely water, soups, potatoes, cereals, sugar and beer. It permitted for breakfast a small cup of coffee and about six drams of zwieback. For lunch any meat, eggs and fish, some green vegetable and fat, some salad and cheese. For the evening meal one and one-half ounces of bread and butter, as wanted, were added. Fluid was limited to 12 to 15 ounces of red or Moselle wine a day. He began this diet in his first case seven weeks before labor, which occurred at term. Four previous labors had resulted in failure, two from perforation and version, and two from induced labor. This labor resulted well, the child weighing 5 pounds, and "acting like a mature child." Horn[1] has since reported a series of 47 cases of treatment of dystocia by Prochownick's diet, 13 of which were by Prochownick, in which all the mothers and children lived. In one of Prochownick's cases the diet failed to cause restriction of growth. These results are very encouraging. I have not yet tested the method in my own practice, but hope to do so ere long. We are all familiar with the effect of hard work and scanty supply of food upon the period of pregnancy and the growth and vitality of the child. This combination must not be confounded with Prochownick's system of feeding, which, he claims, is not a starvation diet at all, although possibly some of our well-cared-for patients might think this a distinction without a difference. I know of no case in which the diet has caused labor to occur ahead of time.

The Induction of Labor.—By the induction of labor we have the one other, and certain, preventive of dystocia, the chief, and almost only objection to its employment, being the risk of fetal death from immaturity. It is unquestionably a fact, however much we may stand theoretically opposed, that induced labor takes precedence over all other measures in threatened dystocia in obstetric practice amongst the well-to-do. There is no denying, too, that this represents a distinct element of sacrifice of the child's interests as compared with major operations at term. Obstetricians likewise show a similar preference, usually in proportion to their inexperience with the two major operations. But if, considering the question raised in this paper, we extend the field of induction of labor to include the minor grades of contraction, those belonging to forceps delivery, then this distinction between the major operations and induced labor grows less, inasmuch as the degree of prematurity of the child at birth is slight.

The problem to be answered is: Does a child born two to four weeks before term have a better or poorer prognosis than born at term after hard labor and delivery by forceps or version? There is not time to enter into detailed argument in answer. It would always depend upon the conditions in each case, the element of greatest variability being the physician in the case. An important feature of the question is that in cases at term which lie between possible forceps-delivery or symphysiotomy or celiohysterotomy, many would be deliverable by forceps-traction if the advantage of head molding could be secured. But the head just misses engagement, so that all the benefit of reduction in diameters is lost. This will mean a difference of from one-eighth to one-half inch in the engagement diameters of the head. From two to four weeks earlier delivery in such cases would secure engagement and consequent reduction by molding.

Further let us note that, in weighing the evils of induction against forceps, it is not only a question of comparative mortality of the children but morbidity from the use of the forceps. It is strange how little attention has been given this subject. Injuries which must cause permanent damage are: Depression of bones, fracture of bones, fracture and compression of the brain, rupture of vessels in the brain or meninges and paralysis and fatty degeneration of the facial nerve. As to the relative danger to the mothers in induced labor and dystocia delivery, they are, no doubt, greater in the latter than in the former.

Finally, as a detail in the induction of labor, I venture to suggest, that, in my opinion, the best means of excitation are: (1) The sterile, solid, flexible bougie—which should be tapering and not blunt, to more surely avoid puncturing the amnion; (2) the small Barnes bag, used very slowly to excitation of pains only, and (3) the tampon, any of these to be preceded by the administration of a full dose of castor-oil.

[1] Monats. f. Geb. u. Gyn., VIII.

THE TREATMENT OF TUMORS COMPLICATING PREGNANCY.[1]

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THIS present paper is limited to a brief consideration of the dangers incident to the complication of pregnancy by various new growths involving the uterus or pelvis, and to the methods by which these complications can be best treated. The limited time allotted necessitates the omission of statistical data and references to the literature and confines the remarks to the most practical points.

Cancer.—In the early stages of cancer impregnation frequently occurs, and, while abortion is frequent, two-thirds of the cases go on toward term. The cancer, under the stimulus of the increased circulation and succulence of the tissues incident to pregnancy, grows and spreads with extreme luxuriance and the cachexia increases rapidly. Some of the women die before term

[1] Read before Section on Obstetrics and Gynecology of the New York Academy of Medicine, April 26, 1900.

from exhaustion or from a septic infection from the breaking-down cancer tissue, an infection which may be the result of bruising incident to even repeated digital examination. If they abort, there is increased risk from sepsis and hemorrhage. If labor at term occurs, over 30 per cent. succumb when delivery takes place spontaneously, many of these from rupture of the uterus, while about 50 per cent. die where the aid of forceps or version or craniotomy has increased the traumatism and subsequent exhaustion, hemorrhage, sloughing and sepsis. About 40 per cent. of the children are born dead and nearly all are of feeble vitality. This certainly is a gloomy picture, but it is not exaggerated and it warrants us in employing the most radical measures if by so doing we can lessen the immediate danger to the mother. A child soon to be motherless and of the most problematical vitality deserves only secondary consideration.

Treatment.—In the presence of cancer of the cervix it is usually impossible to be certain of pregnancy before the end of the third month. Here the child should be entirely ignored, for the operative indication is even more urgent than in the unimpregnated condition. While the uterus is yet small, it and the upper vagina should be removed by vaginal hysterectomy or by Werder's operation. When the conditions are favorable the vaginal operation is best. It should be begun by a circular incision of the vagina 4—6 cm. below the cervix, the vaginal walls being dissected off so as to form a cuff about the cervix, and clamped together by a stout pair of forceps, as suggested by Goffe, so as to shut off the cervix and its infectious material. The operation is then finished in the usual manner.

When the disease is more advanced or the body of the uterus is larger, Werder's method is advisable. Here the ovarian and uterine arteries are tied through an abdominal incision and the uterus freed from bladder and broad ligament without cutting through the vaginal wall. The vagina is then freed from its attachments by blunt dissection as far down as is thought advisable, and the uterus drawn down and out through the vulva by stout traction-forceps attached to the cervix. The peritoneum is then united over the fundus, the abdominal wound closed, and the operation completed by removing the uterus after dividing the inverted vagina at the point selected. If the uterus is too large to pass easily through the vagina in this way, a supravaginal amputation should be made to lessen its bulk before the removal below of the cervix and vagina. This method is ideal, in that it avoids any contamination of the peritoneal cavity or of any cut surface by septic or cancerous matter.

When the condition is discovered during the fourth or fifth month of pregnancy, immediate combined hysterectomy is still the procedure of choice. During the sixth month and later the viability of the child must be considered and the question of waiting until this is assured comes up. When the child is viable, induced labor and hysterectomy or Cæsarean section and removal of the uterus and vagina should be done.

When the case is first seen at term we may find cancer at so early a period that its diagnosis is uncertain. At this stage it does not prevent dilatation of the cervix, but predisposes to deep tears. When the disease is more advanced, but still combined to one lip, it may be scraped and cut away and dilatation aided by multiple incisions and rupture of the membranes so that the pressure of the head may aid in controlling the bleeding which, however, is not usually alarming. Where the cervix is extensively involved or where the cancerous masses are large, Cæsarean section and immediate removal of uterus and vagina is indicated. In these instances craniotomy on a living child is not justifiable, as the mother is doomed in any case, and the crushing and tearing incident to forcible delivery will probably hasten her death more than the abdominal section.

Where cancer affects the vulva, vagina or rectum, remove the mass, if small, and deliver per vaginam; but if the disease is advanced, the abdominal incision gives the best results.

Fibromata.—In the presence of uterine fibroids the chance of pregnancy certainly seems to be lessened, and when the woman is pregnant the risk of abortion is increased. Abortion in these cases is particularly dangerous from hemorrhage and sepsis.

It is certain that fibroids grow very rapidly when stimulated by the increased blood-supply incident to pregnancy, that they show an increased liability to inflammation and to cystic degeneration, often become very soft and succulent; on the other hand, they also quite frequently shrink rapidly or disappear during the puerperal period. This sudden augmentation in size, especially when the growth occupies the upper part of the cervix, rapidly increases any pressure symptoms that may have been present before impregnation.

Interstitial tumors, whether single or multiple, grow most rapidly, particularly in cases where the uterine wall is much thickened. Subperitoneal tumors, especially pedunculated, if near the fundus, do not grow as rapidly and are not as important in their effect on labor unless when very large. With submucous tumors of the body of the uterus, pregnancy rarely occurs and practically always ends in abortion. In general, the higher the situation of the tumor and the more it approaches the subperitoneal type, the less the danger; the most serious cases are those in which the fibroid occupies the pelvic cavity.

The presence of a fibroid is a cause for inefficient or irregular uterine contractions, and as the proper uterine reaction is interfered with, postpartum and puerperal hemorrhages become a serious danger. The condition predisposes to a vicious insertion of the placenta and to malpresentations of the fetus. Uterine rupture is not uncommon, being favored by the obstruction offered by the tumor and by the degenerative changes in the uterine wall caused by the pres-

ence of the fibroid. Inflammation and sloughing of the tumor from the pressure and bruising to which it is subjected during labor is very common and brings with it a most grave risk from sepsis. Excluding subperitoneal tumors of the fundus, the maternal mortality in labor complicated by fibroids has been in the past over 50 per cent., and the mortality to the fetus nearly as much.

Treatment Before Labor.—With small subperitoneal tumors of the fundus and a pregnancy well advanced, expectant treatment is allowable, but during the early months of gestation myomectomy is indicated and can often be done without interrupting the pregnancy. Where the tumor is at the lower uterine pole, enucleation per vaginam is best, as a waiting plan exposes the patient to great risks. With interstitial tumors of the body of the uterus, supravaginal hysterectomy is better than either abortion or premature labor and is easy because of the relaxation of the broad ligaments caused by the pregnancy.

During Labor.—With fundal tumors it is only necessary to be ready to secure contraction during the third stage. If postpartum hemorrhage occurs, explore the cavity of the uterus with the hand, as sometimes fibroids are found that can be easily enucleated, and then pack with gauze. Give ergot. Inversion occasionally follows delivery with tumor of the fundus and necessitates immediate enucleation and replacement, or if this is impossible, perform a hysterectomy.

If the fibroid obstructs labor and is in the anterior wall, it may sometimes be pushed out of the way with the patient in the knee-chest position, or it may be drawn above the brim by the uterine contractions. This cannot happen if the tumor is lateral or posterior. Tumors of the cervix must be enucleated when possible, as even when very small enucleation is less dangerous than forcible delivery. Fibroid polyps, detected only after labor, should be removed, as they are apt to slough and cause sepsis. If the fibroid obstructs labor and cannot be gotten out of the way it is nearly always better to do a radical abdominal operation than to run the very grave risks of sloughing and sepsis which so often follow forcible delivery by forceps or version.

To be successful these operations must be done early, and not late when the patient is exhausted, bruised and septic. If any sign of inflammation or sloughing appears after labor it must always be regarded as an absolute indication for removal of the tumor.

Ovarian Tumors.—Cysts or solid tumors of the ovary form a rare complication of pregnancy and labor. Small tumors, especially dermoids, are most dangerous, as they are most likely to become impacted in the pelvis. Large cysts are not likely to block the pelvis, but they produce great discomfort from pressure and are particularly liable to rotation and twisting or even tearing-off of their pedicles. The dangers incident to delivery by forceps, version or puncture from twisted pedicle, rupture of cyst, intracystic bleeding, suppuration of cyst-contents, intestinal occlusion, septic infection and peritonitis, are so great that the records show a mortality of nearly 50 per cent.

Treatment.—When seen early in pregnancy there is no doubt but that an abdominal section, preferably by an intermuscular incision similar to that now employed in operations for appendicitis, with removal of the cyst, gives the best results. After the fifth month, if the cyst is not impacted and not large, it is right to wait till the fetus is surely viable before operating, but the patient must be kept under constant supervision. At term, if the cyst is small, the child may be driven past it by the natural efforts of the mother. At times the cyst may be pushed above the brim, the patient being anesthetized, if necessary, and put in the knee-chest position. If the cyst is not impacted and labor is progressing well, operation should be deferred until after the birth of the child. With an impacted cyst, puncture or incision through the vagina and delivery by version or forceps would seem the most natural thing to do, but the mortality is so great that it can very rarely be justified. Cæsarean section or supravaginal hysterectomy and removal of the cyst offer the greater chances of safety to both mother and child.

In addition to the three important classes of tumors that have just been discussed, labor may be obstructed by bony outgrowths over certain of the pelvic joints, enchondroma, cysts of the pelvis, hydatid cysts, sarcoma or cancerous infiltration, displaced kidney, and by the muscle-mass that sometimes results from ventral fixation of the uterus. In any of these conditions labor may terminate through the pelvic channel when the mass can be pushed aside or removed, but where the obstruction is serious, Cæsarean section by modern methods will save more lives than forcible dragging of the child through the pelvis. My experience is that during pregnancy abdominal operations in general are well borne and, because of the elasticity and succulence of the tissues, are not as difficult as would be supposed. When possible, see that the excretory organs are put in the best possible condition, avoid all unnecessary hemorrhage, and, particularly, use the most rigid precautions against any septic infection.

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THE INDICATIONS FOR PREMATURE DELIVERY, WITH SPECIAL REFERENCE TO ECLAMPSIA AND THE PRE-ECLAMPTIC STATE.[1]

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IN discussing the subject of the indications for premature delivery, I shall dwell particularly on those offered by the toxemia of pregnancy as well as those indications induced by a disproportion

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between the fetal head and the maternal pelvis. All other indications, and many there are, will simply be mentioned in passing, and for the reason that, while in the latter, for instance, cases of placenta previa and the malignant forms of vomiting of pregnancy, the indications for the interruption of the gestation are well defined and fairly well understood by all practitioners, yet for the former, eclampsia or the pre-eclamptic states, and the subject of pelvic distortion or contraction, relative or absolute, there is such a mist of doubt surrounding the whole question, that many hardly understand the subject at all. On the other hand, there are those who are so confused by the varied and alternating views of our teachers and leaders that they are really at a loss to recognize a means for the induction of premature labor in the conditions just mentioned.

I have always maintained that success in midwifery is not attained by skill in operating. Far better is he, the skilled accoucheur, who can place the indications; for when the indication is well placed, the operation becomes a secondary consideration. An operation, the indication for which is false, can only end in disaster, no matter how skilfully done; on the other hand, clear and concise indications, for no matter what form of obstetric operating, are always followed by good results. The one depends upon the other. In placenta previa, central or partial, or situated dangerously near the dilating zone of the uterus, even though this vicious situation of the placenta is not within reach of the examining finger, and therefore only strongly suspected, there is an almost universal tendency among modern obstetricians to empty such a uterus at once. Until this is done, the woman as well as the fetus is in constant danger from severe and exhausting, if not fatal, hemorrhage. I could go on mentioning such indications by the score, but since there is hardly a difference of opinion in these clear cases, we have but little to discuss.

How different is the condition in eclampsia, or what is a preferable term, the toxemia of pregnancy. At once this confusion of names makes the subject difficult, for we recognize the fact that we are fighting a pathologic state whose vicious complex of etiology and diagnosis is difficult to penetrate. Were there unanimity of opinion, we would feel right in our deductions, even although absolutely wrong, for we know no better. We are no nearer the solution of this problem of uremia or urinary toxemia to-day than we were years ago. All that we can state to-day, and modern scientific investigations do not allow us to state more, is that the system is influenced by some unknown toxic material, arising in the body *per se*, thus constituting an autotoxemia. Whether such depends on the liver, the intestinal tract, the fetus or the kidneys, one or all, is the unknown element and the great stumbling-block. On the other hand, there is the possibility of it being a disease of the heterogenetic infective type, having a bacillary origin with its bacterial toxins. Theoretic reasoning is good and nice as far as it goes, but at the bedside of a woman threatened with so dangerous a complication, we want facts to guide us and treatment to help us. Clinical experience is our best teacher, and this shows us that eclampsia is closely allied to, and largely associated with, kidney inadequacy, and the surest method of treatment is the rapid return of diuresis.

This leads us up to the question when this condition obtains, how long may we procrastinate and treat medically? We are told that when medicines fail, surgery steps in. When are we to know when to interfere? Is it when the woman is already in the throes of a convulsion with its appalling death-rate? Can we predict when the first convulsion is to occur, or, when it occurs, do we know that it will not terminate fatally? Our treatment must be early and timely. I cannot understand the position taken by French surgeons, who, even in the face of convulsions, advise temporizing, for the fear of inciting more violent or more frequent spasms by such active interference. If their results following this waiting policy are in accord with ours, how awful must be the death-rate!

In the study of the pre-eclamptic period, we recognize two conditions which are the direct causal factors in producing it. The first, the true, frank complicating albuminurias, or the exacerbations of an antecedent condition; the second is little recognized because of the complexity of its etiology, and the supposed difficulty of diagnosis. It is a condition in which there appear none of the characteristics of a true acute (parenchymatous) nephritis of pregnancy, but nevertheless in the unrecognized case carries with it a prognosis which is very bad, but just the reverse when timely treatment and interference are instituted. It is variously denominated by the terms, uremia, urinemia, or the true toxemia of pregnancy. In the first class of cases, we have the prominent symptoms clearly defined by urinary examinations. This calls our attention to the fact that close chemical analyses must follow in order to clear up in our minds what is the sole dominant pathologic entity which produces the constitutional symptoms. In addition to the albumin and the casts we turn our attention to the amount of urea excreted and upon its diminution and increase will depend absolutely our further course of treatment. That urea is the agent that is provocative of eclampsia is to my mind proven beyond a doubt. Clinically, by the increased toxicity of the blood of the patient and the diminished virulency of the patient's urine. In personal practical experience, in a large number of women in whom a toxemia was not present, even although albumin was found in large amounts in the urine, 5 per cent. of all pregnant women have an albuminuria. I have seen a great many women with all the urinary symptoms of an acute or chronic nephritis, but have *never* been compelled to induce labor, nor have imminent uremic symptoms ever occurred as long as the urea has been excreted in normal amount. By a

normal amount of urea, I mean the estimation from a sample of the total urine; in round figures, about 500 grains per day, in women otherwise healthy. For it must be remembered that underfed patients, such as we see at the hospital, persistently excrete a smaller amount of urea without symptoms. Further, it must be borne in mind that persistent vomiting, such as occurs occasionally in pregnancy, will markedly diminish the urea excretion, and is dependent upon it, not, as we have been told, that the excessive vomit depends upon the diminished urea.

Urea is the chief product of the body oxidation of albuminoids and the amount thrown off indicates the amount of disintegration of nitrogenous material. What is of greater importance is the fact that in a number of cases, most of them fatal, is that class in which the most careful examination is negative so far as albumin and casts are concerned. Such are cases in which violent convulsion occur, always preceded by classic symptoms of a true uremia. In them the only suspicious condition is the marked diminution of urea. It is this urea that kills, not the albuminuria. If we can only impress this fact upon all medical men, that the estimation of urea is of far greater importance than the presence of albumin, our position will become of some worth. A special emphasis is laid upon the fact that in the majority of albuminurias we simply have a day's signal as a warning of an impending catastrophe. On the other hand, the absence of albumin means absolutely nothing in the presence of certain symptoms. We wish to go on record as stating that the induction of premature labor is never countenanced by the mere presence of albumin in large or small amounts and casts, but always strongly advise the prompt emptying of the uterus in all cases in which scientific medical treatment fails and the urine shows a progressive diminution of urea.

To recapitulate: (1) Toxemia of pregnancy is a complex condition depending on more than one factor. (2) Many women go to term with albuminuria without symptoms referable to toxemia. When such symptoms arise, they are not caused by the albumin present, but faulty urea excretion is always found. (3) In the most desperate and malignant cases there is found neither albumin nor casts. (4) Urea is always found markedly diminished in these so-called true toxemias of pregnancy, or urinemias. (5) Finally, we make a strong plea for a regular and methodical course of urea estimation in all cases instead of, or relegating to secondary importance, the time-honored examination for albumin. (6) Progressive diminution of urea excretion with or without albuminuria is our sole indication for the induction of premature labor which is especially indicated when conscientious medical treatment fails.

The next topic to be considered is the indication for the induction of premature labor for disproportion between the fetal head and the maternal pelvis. It will be noted that I ignore absolutely the term "contracted pelvis," as the title for the second division of the article. This is done purposely, for my experience with many so-called contracted pelves has made me an almost utter skeptic as to its frequency and makes me feel that a true contracted pelvis is a rare condition. The only true contracted pelvis that I *do* admit is one which will not admit the passage of any child, living or dead, entire or totally dismembered. In all other cases, it resolves itself into a question of disproportion between the head and pelvis, *i.e.*, between passenger and passageway. What is a normal pelvis? The answer is a frank one. I do not know. We can never measure a pelvis, we can only estimate its diameters. Very few pelves are absolutely contracted; all may be relatively so. Given a certain pelvis the diameters of which we have carefully estimated, in one labor everything goes smoothly because the head is of average size and well posed; in the same pelvis, a year or two later, the most difficult form of operating may become necessary because of the large head. This I realize is an extreme case, but have we not all met such? Such disproportion will give the accoucheur more to think about and more worry than is likely to occur in labors with the pelvis one or two inches smaller all around with a small fetus as a passenger. It is and always has been the size of a particular head passing through a particular pelvis which has caused the dystocia, and in the largest number of cases the sole cause of a supposed pelvic contraction. We do not measure the pelvis by inches, centimeters or millimeters, as our learned friends in other cities do, but we gauge its receptivity and capacity; no matter how narrow a pelvis may be revealed to us by the pelvimeter, it is never so small but that a child may be born through it either naturally or by minor operative measures; this, of course, always depending on the size of the child. I feel that such a statement will stir up a hornet's nest, but it is made advisedly. To go into details by quoting case after case to prove these assertions, is foreign to my mind, but generally speaking, I will say that I *have seen babies born naturally by women about to be subjected to either Cesarian section or symphysiotomy.* Such babies are, of course, small. I recall one case of face presentation which was born through a pelvis whose diameter would have justified this form of operating with a large baby. On the other hand, we have met many cases where pelvic estimations would make us apprehensive; and yet, by measures to be explained below, we deliberately allow the woman to go to term, and rarely has temporizing been ill advised.

What, then, is our indication for the induction of premature labors in these cases? Are we to be hampered by adhering to the old-fashioned tables found in nearly all our text-books, which tell us in a dictatorial fashion that when the pelvis is contracted so and so much, induce labor at the twentieth, thirty-sixth or thirty-eighth week? Are we to be so blindly scientific, and to lose that

which we all ought to possess, namely, common sense? Is the book-worm scientist better off if he tells a young mother that, because she has a pelvic contraction to 10 cm., her labors must be induced at the thirty-second week? Possibly, but I doubt it. But suppose this young mother goes to another less brilliant practitioner. He laughs it off and tells her, in his inexperience, she is all right—and she is all right, for she goes to term and is delivered naturally of a small baby. Does the young mother know the small baby was her good fortune? She wanted her baby naturally; she got it. The scientific accoucheur got what? The black eye. And the pseudo-one obtained the reputation. Except in absolute pelvic contractions, we never elect the induction of premature labors until the time comes for its performance, and that time arrives when we cannot get the head to engage by suprapubic pressure. Our mode of procedure is as follows: Every woman at her first visit is subjected to a thorough pelvimetric examination, not that we are absolute believers in the pelvimeter, but because this instrument gives us a clew to pelvic distortions and contractions. When nothing suspicious is found, the probability is that the labor will be normal, providing the fetus is not too large or malposed; and yet, to avoid this, the woman is subjected, from the eighth month, to the same manipulation as one with a small pelvis, in whom the examinations commence at the seventh month. From this time on, once in two weeks, the gravid woman is examined in the bed. With well-flexed legs, the bladder and rectum being empty, one or two fingers of one hand are introduced into the vagina, while the disengaged hand grasps the head which lies in or upon the brim. By firmly pressing it into the pelvis in the line of the axis of the superior strait, downward and backward, the head is made to enter the pelvis. When this is found just possible, then the head is certainly not capable of entering that pelvis at a later time; or, if we find the head and pelvis fit snugly, the same indication holds good, and that is the time to induce labor. But if, in spite of even a considerable pelvic contraction, we are able by our suprapubic pressure to get the head to engage up to the end of a normal uterogestation, we find no indication for interference. For we are of the belief that a head that will engage at the brim will readily pass through the pelvis, for funnel-shaped pelves are so extremely rare as hardly to be considered.

We have attempted in this paper to make ourselves clear as to the following points: (1) That the term pelvic contraction is only a relative condition; and in but a very few cases does the bony pelvis afford an absolute indication and that in cases only where neither a living nor a dead child can be delivered by the natural passages. (2) We do not measure a pelvis by inches, centimeters or millimeters. We estimate its size and test its capacity for the reception of the head which must pass through it. (3) Small and even fair-sized fetuses have been delivered through pelves whose diameters were far from normal and in which the possibility of major forms of operating were to be anticipated; and in some major operative interference had already been in active process. (4) Women with apparently normal pelves in labors with large children very frequently give us the picture of a pelvis relatively contracted, and as such would warrant operations of a more difficult type than those in whom the pelvis shows a diminution in all its diameters. (5) We advise against the election of any form of operating months before, since the fetal head must always remain the sole doubtful element. (6) When once we fail to get the head to engage, it is proof positive that the pelvis is too small for the head, or the head too large, and when this condition obtains, the time to interfere is at hand. (7) We advocate the systematic use of the pelvimeter for purposes of comparison only. We deprecate the absolute value of the instrument as one of precision, and never pin our faith as to results which it gives in determining when or when not to induce labor when there is disproportion between maternal pelvis and the fetal head.

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WHEN IS IT PROPER TO INTERFERE IN APPARENTLY DIFFICULT OR DELAYED CASES OF LABOR, ESPECIALLY IN PRIMIPARAE.

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THE prevention of evil is generally more satisfactory than striving to overcome its deplorable consequences. And in medicine it is the ideal which we should keep before us. In no branch of medicine, perhaps, have we more frequent opportunities for exercising our skill in the prevention of unfortunate conditions than in obstetrics. The above subject of discussion illustrates forcibly the importance of a careful consideration of the subject from different standpoints.

The process of parturition is ever with us; and, although so-called civilization has succeeded in part in modifying the laws of maternity to a considerable degree, still maternity is an essential factor in the growth and maintenance of the great human family. It is not—or ought not to be—a pathological process, but a physiological one. When disease interrupts or disturbs it, when mechanical difficulties prevent or obstruct it; when injury to mother or child results from its performance, it becomes a pathological one. When a healthy living child is born, leaving a mother with uninjured tissues to complete later processes of involution according to Nature's plans, we have the picture of a physiological parturition, which should be the model up to which we would endeavor to bring our obstetrical work.

Much has been well said and written concerning the various accidental or incidental causes of departure from the normal type; and we cannot pay too much respect to the important teachings

so clearly laid down. It has occurred to the reader that he can possibly contribute, if not a new thought, at least a new emphasis to a thought in offering a few words as to the *time* which should be allowed to elapse before we, as obstetric attendants, may with propriety interfere in assisting the parturient act. And, in order not to waste valuable time by repetition of directions suggested by others, as in case of disease, deformity, malposition and the like, it is intended to confine these very meager suggestions chiefly, if not entirely, to one source of untoward consequences, occurring in primiparæ in particular.

A reasonably careful consideration of the injuries inflicted in childbirth will convince one at once that by far the saddest and most serious are inflicted upon the mother in childbed for the first time. Thousands of otherwise healthy, robust and happy young women are annually plunged into the miseries of invalidism, and many are sent to an untimely grave by this function—the highest of her nature—one which, we must admit, should be classed among the functions which we recognize as physiological. The frequency of this awful change, which so suddenly transforms a happy life, is itself sufficient to demand our earnest observation and study of the facts. If it be true, as we have premised, that this sudden transition from health to disease, from happiness to misery, from life to death, comes so frequently and particularly to primiparæ, then it points certainly to a fact—there must be an element of danger in the primipara, which is frequently absent in the multipara; and of this we should take careful heed.

The fact that malpresentations and malpositions of the child, that diseases and deformities of the mother may obtain in the case of the multipara, as in the primipara, does not in any way detract from the force of the proposition before us, namely, that a woman bearing her first child is, for reasons peculiar to her class, particularly liable to certain difficulties and dangers, which seldom menace the woman who has before gone through the normal stages of labor.

In order to keep this argument within the briefest possible lines, consistent with intelligibility and scientific value, let us note that, inasmuch as there is practically no difference between the first child and the third, or fifth, the difference must exist in the mother herself. And, as the forces are about the same in the one class as in the other, it must have to do with the passage through which in each instance the child has to travel.

Having thus sifted the matter down to this point, we may readily throw out of consideration the parts which remain practically immutable in each, multipara and primipara, the bony canal of the pelvis, since this is no more a factor in the one class than in the other. We have, therefore, the soft structures of the mother alone to consider.

What is the difference between the tissues of the young mother, with her first child in transit, and those of her who has already experienced the function of childbearing? Simply that in the primiparæ that peculiar, physiological softening down and relaxation of the soft parts, which should precede the passage of the child, goes on generally very slowly, occupying many more hours in its accomplishment than in the case of the multipara. Hence, if this metamorphosis, or physiological change, be not permitted to reach its proper accomplishment, and surgical interference be offered before the tissues shall have made the necessary change, then, injury is bound to follow with all its direful consequences.

It is to this oft-repeated error of truly "meddlesome midwifery" that the reader desires to point with distinctness and emphasis. The question of long-continued pressure, with its dangers, must not cloud the judgment. We all know, or ought to know, the indications to assist an arrested head which is threatening the vitality of the maternal tissues. But too many of us are apt to forget that there is another extreme to which we should not go, if we would let Nature do her normal work with our assistance. We have seen obstetricians smile incredulously at the importance given to the changes in maternal tissues above alluded to; and we have known them to explain the tardiness and difficulty of the case by assuming and asserting the existence of "slight pelvic contraction," etc. But when a second confinement in the same woman was experienced, we have noted that the "pelvic contraction" was not involving the case.

We believe that obstetricians should remember and that patients should be taught to understand that there is something more in the complex process of childbirth than the mere change of location of the child from the womb within to the world without. There is a clearly-marked process of preparation, through the circulatory forces in the tissues involved, which causes relaxation and stretching of muscular expansions and absolute softening of mucous and other structures, thereby fitting them essentially for the extraordinary distention to which they are to be subjected. If, before such changes have taken place, operative interference be precipitated, the structures are liable to extensive and dangerous lesions with all the ills attending such accidents. It is pretty desirable, then, to take careful account of all the conditions obtaining in a given case before we decide to intervene with surgical assistance. If the presenting part be high up and movable, the pelvic measurements within normal limits, the soft parts unrelaxed, not edematous or swollen, the case may be and should be allowed to proceed without interference. When the forces are apparently normal, the presenting part arrested at any given point, say, for over half an hour, or, if the soft parts of the mother, having once been relaxed, thoroughly moistened with mucus, are becoming hot, edematous and discolored, the indications are clear for early and efficient assistance. When these indications appear there should be no delay.

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DISCUSSION ON SYMPOSIUM.

Comparative Prognosis.—Dr. E. A. Tucker opened the discussion. He said that the prognosis of what will happen in a second labor from the course of the first labor is by no means absolute. The first labor gives valuable hints, but not positive indications as to the conditions that will obtain in succeeding labors. Experienced obstetricians know well that labors in the same woman may be very different, although the child and the presentation may not differ from those of preceding labors. The nervous condition of the woman, her general health, her muscular tone—in a word, her constitutional condition has a great deal of influence on the character of a particular childbirth. This makes the value of pelvimetry very relative. Medical literature is full of laudation for the preliminary information that may be gained by pelvic measurements. Much of this except in extreme cases is a delusion. The text-books have given entirely too much weight to this aspect of advance in obstetrics. A good-sized pelvis and a not abnormally large child may yet give rise to difficulties in a labor which will be extremely annoying and require most skilful interference. The induction of labor, especially in the better classes, is an expedient that will surely find more and more favor with obstetricians as time goes on. There is a slight increase of infant mortality, due to it, but this is not enough to dissuade from the employment of a method which often saves maternal life and always lessens maternal danger. The time when interference to produce labor is advisable is a most difficult problem to decide. Of late we have learned that we can by combined manipulations decide whether the head seems growing too large for engagement at the superior strait. The employment of some such method will be undoubtedly the duty of the obstetrician in the near future.

It is the amount of urea that a woman is passing and not the amount of albumin that constitute the danger-signal for the development of eclampsia. In every suspicious case, that is, in every pregnant woman in whom there is some headache and restlessness for which no good reason can be found, and especially where edema or eye-symptoms develop, a careful estimation of the urea that is being excreted in the urine should be made. This is the imperative duty of the obstetrician. For the ordinary healthy woman without these symptoms, this careful investigation of the urine is not needed. But the slightest suspicion should be sufficient to ask for a sample of the urine and not be satisfied merely with finding out whether or not it contains albumin. The presence or absence of albumin may under circumstances be a very fallacious criterion.

Walking During Pregnancy.—Dr. Tucker recommends pregnant patients to walk a good deal during the latter months of their pregnancy. He considers this the very best form of exercise for them and one that is well calculated to favor the engagement of the fetal head. The walking should be increased more and more toward the end of the pregnancy. If at the end of eight-and-a-half months the head is not engaged the daily walk should be increased one-half mile each day, until the patient is walking at least six miles. Another exercise that is of great service is for the woman to lie in bed and lift herself up to a sitting position without support. This brings into play her abdominal muscles. It increases their functional capacity, makes them of more service during the actual labor itself and presses the head well down into the pelvis before labor begins. The old adage, "let Nature take her course," is a very good one under proper circumstances, but it has killed many an obstetrical patient. There are two classes of physicians who make mistakes in the treatment of obstetric cases. They are the extremists, the non-interferers who wait too long and the meddlers who are in a hurry to help Nature along. Both of them entail unnecessary danger on their patients.

Pelvimetry.—Dr. Egbert H. Grandin said that he is a thorough believer in pelvimetry. It would be better for patients if there were more of it. The result of an obstetric case, however, is never a question of millimeters, nor of quarter- or half-inches, but short diameters discovered by the pelvimeter arouse suspicion and so lead to the taking of precautions which save annoying delay and the development of serious conditions. A woman with an average normal pelvis may yet have considerable difficulty in labor. She will have much more difficulty in one labor than in another, depending on the relation of the child to the pelvic canal and on the strength of the expulsory forces. Besides pelvimetry of late years, we have learned that we can find out whether the fetal part that presents will engage or not. If the presenting part will engage under suprapubic pressure, then the woman will deliver herself without difficulty, as a rule, or at least without insuperable difficulty. The difficulties encountered from a narrow outlet in a funnel-shaped pelvis are so rare that they may practically be neglected. If, however, the presenting part cannot be made to engage, it is an indication that active interference will be necessary. For this the induction of premature labor, when not too soon before the expected normal birth, is a very useful procedure. Dr. Grandin is sorry that he cannot agree with Dr. Ayers that the introduction of a sterile bougie is an easy and effective way of inducing labor. Days and weeks even are needed sometimes before pains are initiated by this method. Besides, it involves imminent risk of the rupture of the membranes and the loss of the waters at the very beginning. This would completely spoil the natural method of dilatation for labor. Barnes' bags are also unreliable. The best method in Dr. Grandin's experience has been a preliminary tamponade of the cervical canal until the lower segment of the uterus becomes soft; then, manual dilatation with extraction ac-

companied by version, if necessary. Dr. Grandin has used this method in a number of cases now and has been very well satisfied with it. It causes no annoying delays for the patient or the physician and is less liable to cause complications, infective or otherwise, than any other method advised.

Toxemia of Pregnancy.—Dr. Grandin said that this subject is undoubtedly very poorly treated in the text-books on obstetrics. The older text-books advised a perfunctory examination of the urine for albumin as the important point. There are even some of the modern obstetrical manuals which give only the same advice. This doctrine should be relegated to the limbo of worn-out obstetrical traditions. Dr. Grandin has seen fifty per cent. by bulk of albumin in the urine and absolutely no trouble for the pregnant woman. On the other hand, he has seen not a trace of albumin present in cases in which uremia in its worst form developed. It often came on suddenly and was followed by coma and death before measures could be taken for its relief. Opium and pilocarpin and venesection have each had their day in the treatment of this toxemia. None of them has accomplished any good. Veratrum viride, employed up to the stage when the pulse dropped to fifty or sixty, was also ineffectual in preventing a fatal termination. The rule should be not to wait for cephalalgia, or such severe eye-symptoms as diplopia, but as soon as milder symptoms develop and persist and the excretion in urine is very much less than it should be and ordinary treatment fails to relieve these conditions, then the uterus should be emptied. After this the colon should be irrigated, venesection should be employed and nitroglycerin administered, if it seems indicated. When this is borne in mind and the old traditions of useless medication for the condition are forgotten, we shall have fewer deaths from the toxemia of pregnancy.

Dr. Barrett said that it is not the amount of albumin in the urine, but the deficiency of urea which causes toxemia in the pregnant woman. He has seen large amounts of albumin, yet the patient went on to safe delivery at term. On the other hand, absence of albumin gives no assurance of safety from toxemia. True contraction of the pelvis is rare. Very often in difficult labors where we believe that we have to do with a contraction of the bony pelvis, it is really the soft tissues which interfere with the normal progress of delivery. It is evident, then, that pelvimetry has only a relative value. It is a little like measuring the outside of a house in order to find out whether a man could pass through his bedroom-door. The future will surely demonstrate that the soft tissues have most to do with the interference with labor. The practical rule for the obstetrician is to wait as long as labor progresses, no matter how slowly it may be progressing. To interfere before progress stops is practically always unjustifiable.

Dr. Francis Stewart said that during the last months of pregnancy the urine of every patient should be examined carefully. The pelvimeter is fallacious and a practised sense of touch and an experienced judgment as to the relative sizes of fetus and pelvis are much more important and much better guides. Walking cannot be too much insisted on for the pregnant woman. During the latter months, especially when the disinclination to walk is very strong on the part of most women, the taking of long daily walks must be insisted on.

Dr. Ayers said that there must be some restriction as to the amount of walking in certain cases. Where the amount of urea excreted is a little lower than normal there is a narrow margin for the excretion of metabolic products. In these cases any excess in exercise might easily precipitate a serious uremic condition.

Restriction of Diet.—Dr. Marx said that in stout women, who are liable to have fat babies, the restriction of starches and sweets has always seemed to him a very good procedure. They should be advised to take frequent acidulated drinks and to eat plentifully of fruit. Not satisfied with this, some years ago in two cases in which he feared trouble because of overfat babies, he advised the use of thyroid gland. It was used very sparingly, beginning with a quarter of a grain three times a day. At no time did either of the patients take more than a couple of grains three times a day. Both of them complained that they felt life much less vigorously than before. And he feared that a continuation of the treatment might prove serious to the children. It was stopped. It is sad to think how often uremia occurs in physicians' wives. Too often physicians do not realize that albumin is of no importance and that it is the diminution of urea that causes the toxemia.

MEDICAL PROGRESS.

Scarlatina Antitoxin.—Having reported the discovery of the germ, the diplococcus scarlatinæ, and believing it to be the specific cause of scarlet fever, its presence being easily demonstrated in every case of the disease, W. J. Class (*Phila. Med. Jour.*, June 23, 1900) has made some experiments in an endeavor to find an antitoxin. It was difficult to get a culture which could be used as a standard, because of the fact that the germ varies so much in its virulency. A pure bouillon culture of the germ was finally obtained and filtered through a porcelain filter. A small injection of this killed mice within from twelve to thirty-six hours. A chemical examination of this toxin was not made and, therefore, its nature is not known. As it was known that swine were susceptible to the germ, the writer used a female, weighing about twenty-five pounds, in an endeavor to render it immune by administering successively-increased doses of the toxin. At intervals of about sixteen to eighteen days four injections of respectively 1 cc., 2 cc., 3 cc., and 5 cc. of this filtered culture were given to the animal.

The reaction following the injections diminished after the first two and was least after the last and largest, that of 5 cc. of the filtered culture, at which time the writer considered the animal to be relatively immune. The animal was then bled and the serum obtained from which some effect might possibly be expected. Mice were found too susceptible to the germ and too small, and white rats have a natural immunity, so guinea-pigs were selected for the experiments. A culture was now obtained of which 0.1 cc. in 1 cc. of water proved fatal to a guinea-pig if injected into the abdominal cavity. Four sets of experiments were made, two guinea-pigs being used for each experiment, one animal receiving an injection of the germ alone, while the other received the germ plus the serum. In Experiment 1 the guinea-pig, which received an injection of 0.1 cc. of the culture dissolved in 1 cc. of distilled water, quickly sickened and died. The other guinea-pig received a similar injection of the same strength and size, but it was preceded by a subcutaneous injection of 1 cc. of the serum. There was no reaction in this second animal, which has since remained well. In the organs of the guinea-pig which died the Diplococcus scarlatinæ was found. Experiment 2 (similar to Experiment 1) presented the same results. In Experiment 3 the animals were inoculated with a culture obtained from the liver of the guinea-pig which died in Experiment 1. The unprotected animal died within fifteen hours. The other animal received first an injection of .5 cc. of the serum, but it sickened and died within thirty-six hours. This culture was, however, more virulent and the dose of the serum smaller. In Experiment 4 the animals were treated in the same way as in Experiment 1 and with the same results, *i. e.*, the animal which received the serum lived, the other died. In all the animals which died the Diplococcus scarlatinæ was found in their livers, kidneys, spleens and heart's blood. The writer does not wish to claim that he has been able to produce an antitoxin that will do for scarlet fever what diphtheria antitoxin has done for diphtheria. He simply states the facts as he found them in his few experiments. He still believes that the Diplococcus scarlatinæ is the specific cause of the disease, and feels sure that others will arrive at the same conclusion if they will give the matter an unprejudiced investigation.

A Case of Pernicious Anemia with Yellow Bone-Marrow.—In most cases of pernicious anemia the yellow marrow of the diaphyses is converted into red. There is, however, another, the aplastic type, which differs from the first-mentioned, the metaplastic, in the entire absence of regenerative power on the part of the hematopoietic tissues, and thus no red marrow in the long bones forms. C. S. Engel (*Zeitschrft. f. klin. Med.*, Bd. 40, Hft. 1 and 2) relates a case with the following blood-analysis: Red cells, 2,115,000; hemaglobin, 18 per cent.; slight poikilocytosis; no microor macrocytes; no nucleated red cells; leucocytes much diminished; no eosinophiles; neutrophiles, 7 per cent.; lymphocytes, 90 per cent.; no myelocytes and no polychromatophilia. In the entire absence of marrow-elements the blood lacked the pathognomonic cells of metaplastic pernicious anemia. The author discusses the question as to whether his case can be included among the aplastic type and whether it is possible to ascertain from the condition of the blood the state of the blood-forming organs. Normally the marrow is the most important source of both red and white cells, the spleen and lymph-nodes being of importance only in relation to lymphocytes. In case the marrow has lost its function, the nucleated cells from which the normal erythrocytes develop will disappear, the erythrocytes themselves will diminish, neutrophile leucocytes will become scant, while lymphocytes will be present in abundance, since their source of origin is intact. The post-mortem examination of the author's case showed the anticipated absence of red marrow and many non-motile bacteria, the character of which was not determined, in the marrow of the ribs.

Prolonged Sleep.—A unique case of prolonged sleep of seven months' duration in a girl eighteen years of age, suffering from sarcoma of the pituitary body, came under the care of F. Soca (*Gaz. hebd. de med. et de chirurg.*, May 31, 1900). There was at first general asthenia with headache, optic atrophy, especially on the left side, with dilated pupils not reacting to light, but no ocular palsies. Soon the sleep began, from which the patient only awoke to take food. Toward the close of the disease, memory and attention were much affected while the patient was conscious; speech was incomprehensible, the reflexes were exaggerated and there was some muscular atrophy. Death resulted from bronchopneumonia. A tumor the size of a mandarin, reaching into the third ventricle, was disclosed on autopsy.

Chronic Purulent Otorrhea.—A suppuration of the middle ear not kept up by necrosis, polyps or a foreign body, is usually chronic because (1) the tissues are lowered in vitality, (2) the septic material is active, and (3) drainage is poor. The necessity of pursuing active treatment in these cases is urged by C. L. Filt in the *New York Medical Journal* (June 23, 1900). The drainage can seldom be improved, but the tissues may be stimulated and the virulence of the germs destroyed. When the discharge is profuse the ear should be syringed out two or three times a day with a very warm solution of two-per-cent. carbolic acid or other antiseptic. Once a day after irrigation, the canal should be mopped out with absorbent cotten and an antiseptic dusting powder be blown in. Too much powder should not be used to block up the canal. This "dry treatment" will cure a case in one-sixth the time required by solutions. The best powders to be used are the iodine bearing ones, such as iodoform, iodol, aristol or iodomuth. When the dis-

charge is slight irrigations need not be used, but the insufflations should be employed once a day.

The Value of the Tuberculin Test.—The value of the tuberculin test in the early diagnosis of cases of tuberculosis is discussed by J. M. Anders in the *New York Medical Journal* (June 23, 1900). It does not depend on its greater reliability as compared with other methods, but rather upon the fact that it permits of the recognition of the disease in its latent as well as in its incipient stages. M. Beck reports that out of 2508 injections made, tuberculosis was first detected in 1154 cases by means of the reaction obtained. It is claimed that a well-defined reaction occurs in eight-per-cent. of apparently healthy individuals, yet some of these may be latent or obscure cases. Failure of reaction in dubious cases is often due to the fact that too small a dose has been given. Cases of bone and joint tuberculosis require larger quantities than any other form of the complaint. It is believed that medium-sized initial doses (from two to five milligrams) should be employed since this usually obviates the necessity of repeated injections. The results of a large number of investigators show that the test is sufficiently accurate for practical purposes. It has been claimed by Virchow that tuberculin caused a maceration and softening of the tubercles which might result in the liberation of the bacilli from tubercles in the process of recovery. More subsequent clinical investigations have led nearly all competent observers to emphasize its superior value as an aid to diagnosis and to confirm the claim of apparent harmlessness. Since tuberculin does not aid the healing of diseased areas it should not be used when the diagnosis is clear. Furthermore, the more extensive the lesion, the larger the dose required to obtain a reaction, and the greater are the ensuing local disturbances.

Ceruminous Impactions in External Auditory Canal.—To the general practitioner a few very useful hints are given by S. Kohn in the *Medical Record* (June 23, 1900) in regard to the impactions which occur in the external ear. About fifteen per cent. of all cases of ear disease are due to this affection. There are three varieties, the classification depending upon the composition of the plugs. The simple ceruminous impactions, sometimes containing a nucleus and consisting also of epithelial cells, hairs and detritus, are the most frequent. A second variety is the epithelial plug, found principally of epithelial scales and is due to a chronic desquamative dermatitis. The third variety is the cholesteatoma of the external canal showing through the speculum as a pearly gray mass. It usually originates in the mastoid cells and by absorption works its way to the canal. It is claimed by some that every case results from an inflammation of some part of the auditory apparatus stimulating the secretion of cerumen. As a rule, after the removal of the plug there is not the complete restoration of hearing that is usually expected, for there is often an old otitis media or disturbance of the function of the membrane or ossicles due to the pressure of the plug. The head-mirror and speculum are all the instruments necessary to make a diagnosis. A patient complaining of deafness coming on suddenly, fulness of ear, dizziness, who hears the tuning-fork applied to the middle of the forehead more markedly on the deaf side than on the normal, has probably an occluding plug. The best method of treatment is the use of large quantities of sterile warm water. The water should be at about 80° F. and unmixed with anything except perhaps bichloride, 1:5000. A large sterilized syringe is used and about a pint of water carefully injected into the ear. If the plug is very hard a saturated solution of bicarbonate of sodium or a two-per-cent. solution of carbonate of potassium in equal parts of glycerin and water may be dropped into the ear three or four times per day. Two days of such treatment are usually sufficient. Cases requiring the curette, forceps and probe had better be left to the specialist.

Appendicular Pleurisy.—The following are the conclusions of M. Dieulafoy (*Bull. de l'Academie de Med., La Revue Méd.*, p. 365) on this subject: This is a distinct disease and, just as hepatic abscess, may follow appendicitis. In the latter, involvement commonly occurs by the portal vein; in the former the avenue is adhesions or lymphatic channels. It occurs only in the ascending type of appendicitis in which the pus gradually works its way up behind the cecum, colon and liver, finally forms a subphrenic abscess with abundant adhesions and encapsulations of the exudate all along this path. Finally perforation of the diaphragm occurs or the lymphatics carry the infection across into the thoracic cavity. The appearance of this complication is six to ten days after the onset of the appendicitis and usually during a period of remission in the symptoms of the primary lesion. With exceedingly rare exceptions it is on the right side, often confused with a hepatophrenic lesion, usually accompanied by active pain in the right hypochondriac region or right chest with fixation, nervous dry cough, and much dyspnea. Sometimes the pleurisy can not be outlined and shows only dry friction sounds, or the pus is deprived of much of its toxic effects, is practically sterile, or the effusion is purely serous and disappears promptly. Oftener the exudate is highly toxic, infective, putrid, gangrenous, very abundant with signs of a full chest, often followed by those of pneumothorax due to the evolution of gases by the gangrene. The prognosis, always serious, rests upon the general condition, the character and rate of the pulse, and the enfeeblement of the patient. In the presence of a right purulent putrid pleurisy a preceding appendicitis should be sought. Early surgical attack upon the pleurisy and the appendicitis is indicated. The patient, already highly toxic, usually dies; hence, the true treatment is prophylactic, in prompt diagnosis and relief of the appendicitis. In this way this and all other complications of appendicitis can be prevented.

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SATURDAY, JUNE 30, 1900.

TETANUS AND ITS TREATMENT.

THE season of the year is again at hand when tetanus in our larger cities takes on somewhat the character of an epidemic. Last year some eighty deaths from the disease were reported in the Eastern States. It seems hopeless to expect any abatement of the yearly fireworks nuisance. Until this is attained the recurring danger from tetanus may be awaited with certainty. It is not the peculiarly-irritating quality of the burns made by the explosives, nor is it the contamination of the fireworks by the tetanus bacillus in packing that causes tetanus to result from these wounds. It is due to the fact that, in the seared and often lacerated wounds made by toy pistols, the tetanus bacillus, so common on our streets in the summer-time, finds beneath the surface of the skin, where it is well protected from all contact with oxygen, a favorable nidus for its anaerobic growth.

The prime indication for treatment is the free admission of air to every part of the wounded tissues. For this reason it is inadvisable to cauterize wounds in which there is fear of tetanus developing. The searing process, by the production of an eschar, effectually occludes the deeper tissues from the pervasive germicidal influence of the oxygen of the air. It is probable that the cauterization produced by the missile itself is an accessory etiologic factor in the original production of tetanus. For reasons similar to those which seem to contraindicate cauterization, strong antiseptics should not be used on a wound that is suspected of being infected with tetanus bacilli. In the spore-stage of the bacillus, which is the form in which it usually occurs in the presence of air, the tetanus bacillus is extremely resistent to the action of chemical germicides. It is futile, therefore, to attempt to destroy entirely the bacilli by such methods. The vital resistance of the tissues is sensibly lowered by their use and the dying tissue serves rather to protect the *bacillus tetanus* from the inhibitory influence of the free oxygen of the air.

The serotherapy of tetanus has not fulfilled its early promise, yet there still remain encouraging features in its use. When symptoms of severe tetanus have developed it is practically agreed that antitetanic serum is not of much service, at least when administered hypodermically. As a distinguished authority has said, the initial symptoms of tetanus, as we see them, do not herald the beginning of the disease, but really the beginning of death from the disease. If possible, treatment should anticipate the manifestation of the nervous symptoms of the disease. For this purpose the injection of antitetanic serum as a prophylactic seems advisable in cases in which there is good reason to fear that infection with tetanus bacilli may have taken place. Tetanus serum is now made of such high antitoxic value that the injection of two or three cc. of serum would be sufficient, in the presence of any suspicious wound, absolutely to guarantee immunity from the disease. The mortality of the disease is so high that prophylactic injection seems justified in all cases in which burns or lacerated wounds occur that have been contaminated by street dirt.

The intracerebral injection of antitetanic serum has not given all the good results that were expected from it. Those who have used this method of treatment most, however, speak very highly of it and will continue its practice in severe cases. Several cases successfully treated by the injection of antitoxic serum through a lumbar puncture have been reported. The serum so injected finds its way into the subarachnoid space and very probably also into the ventricles of the brain quite as effectually as if injected intra-

cerebrally. Moreover, a certain amount of the toxins of the disease that are known to exist in the cerebrospinal fluid are evacuated. This method of injection after lumbar puncture is far simpler than intracerebral injection. The latter is a major operation; the former can scarcely be dignified longer by the name of operation at all.

Cases of tetanus will unfortunately develop this summer as in other years. For these, early lumbar puncture with injection of 5 to 10 cc. of antitetanic serum should be tried. Where symptoms indicate a very severe type of the disease and of a fulminant character, a preliminary injection of a quantity of normal saline solution a little less than the amount of cerebrospinal fluid evacuated would serve to dilute the toxins of the disease and assist in their removal before they are fixed within the nerve-cells. This washing out of the spinal canal has been done a number of times, although not, we believe, in tetanus.

For suspicious street wounds, the prophylactic injection of tetanus antitoxin seems not only justified, but demanded as a duty by the present conditions of prophylactic therapeutics. Our bacteriologic knowledge of tetanus, its cause and its toxins, is a triumph of scientific medical advance. Unfortunately, all this knowledge has, as yet, brought but a modicum of benefit to clinical medicine. Let us hope, however, that our better realization of the conditions of the disease and the suggestions as to methods of treatment that are now before the profession will complete the successful practical application of the great scientific principles that have been established. The treatment of tetanus will be more fully amplified by Dr. Lambert in our next issue.

ECHOES AND NEWS.

NEW YORK.

Medical School Closed.—At a meeting of the corps of teachers of the New York School of Clinical Medicine, held at the Academy of Medicine, June 21, 1900, it was decided to wind up the affairs of the School and close it permanently. This action was taken in consequence of continuous interference of the lay Board of Trustees in its affairs.

St. John's Guild opened its Seaside Hospital at New Dorp, Staten Island, on June 15th for the reception and care of sick children and their mothers. Patients are being conveyed to the Hospital free of cost by the 10 A.M. and 2.30 P.M. Staten Island ferry, under the care of a nurse and orderly, until the Floating Hospitals are put into commission, which will be the early part of July. All patients are admitted free without regard to creed, color or nationality. Doctors may obtain tickets for distribution among their patients at the office of the Guild, No. 501 Fifth Avenue, upon application.

Contagious Diseases.—For the week ending June 23, 1900: Measles, 304 cases and 14 deaths; diphtheria, 257 cases and 30 deaths; laryngeal diphtheria (croup), 8 cases and 3 deaths; scarlet fever, 107 cases and 8 deaths; smallpox, 4 cases and 1 death; chicken-pox, 19 cases; tuberculosis, 178 cases and 135 deaths; typhoid fever, 18 cases and 9 deaths; cerebrospinal meningitis, 6 deaths; totals, 895 cases and 206 deaths.

To Cleanse Chinese Quarters.—The Board of Estimate has appropriated $20,000 for the Board of Health to use in fumigating the Chinese quarters in Manhattan, Brooklyn, and Coney Island. It is expected that when an attempt is made in Chinatown to carry out the work of fumigation, the scenes enacted in San Francisco will be repeated. The California Chinese appeared panic-stricken while the work was going on.

Broken Neck.—It is evident that all cases of fracture of the cervical vertebræ cannot expect the fortunate result that attended the recent successful case of Walter Duryea at Roosevelt Hospital. An operation was performed June 22 at Fordham Hospital upon a man who had fallen from a cherry-tree and sustained an injury almost identical with that of Duryea. The patient died a few minutes after recovering from the anesthetic.

Unreported Consumption Cases.—At a meeting of the New York City Health Board on June 25th, it was declared that there were 40,000 cases of consumption in this city during the past year, of which physicians reported but 9,000; the hospitals reported all such cases promptly, but "physicians were backward in reporting private cases." It is thought that a great many cases were kept secret in order to deceive life-insurance companies. Bright's diseases, it was declared, is ascribed to a great many cases in which tuberculosis is the primary cause. President Murphy directed that if physicians would furnish to the commissioners information to the effect that consumption exists in any given case, such information would be regarded as confidential.

Charges Preferred Against Dr. Jenkins.—Charges have been recently forwarded to Mayor Van Wyck against Dr. William T. Jenkins, Health Commissioner and brother-in-law of Richard Croker. The charges are sworn to by Dr. Willard P. Worster, of No. 203 West Eighty-first street, who has been engaged in practice in this city for the past thirty-six years. The charges allege: "That for the past three years the medical care of sailors has been diverted by William T. Jenkins, one of the Health Commissioners of the City of New York, from its legiti-

mate channels and so as to prevent healthy or honest competition.

"That, as your petitioner is informed and verily believes, the said William T. Jenkins caused to be incorporated a society in the city of New York for his benefit known as the Merchant Marine Hospital Service (Foreign) and Dispensary. That the business of said alleged hospital service and dispensary is alleged to be conducted at the Cheseborough Building, No. 17 State street, New York City. That said William T. Jenkins is the managing director; that one James Jenkins, his brother, is a clerk therein, but not a physician, who wears a badge marked, 'Health Department, City of New York,' and one J. S. Richardson is a doctor employed by said Jenkins and said society to visit ships and examine crews. That there is no hospital connected with the rooms or hospital service and no dispensary.

"That your petitioner is informed and believes that said business has been secured and is retained by said William T. Jenkins by representations made by him to ship-owners abroad and ship-owners' agents in this city; that he can and will favor their ships and crews by and through his office as Health Commissioner at this port."

PHILADELPHIA.

Public Baths.—The nine free public bathhouses were opened Monday, June 25th. Last year they were patronized by 3,500,000 bathers.

Chief of Charities.—Dr. John B. Shoemaker, lately appointed a member of the Board of Charities and Corrections, has been made president of that department.

Sterilized Milk and Ice Society.—This society has lately begun a new season's work. It supplies pure milk from tested herds at a very low rate and sterilized milk is retailed in one-cent bottles, this being sufficient for the feeding of one infant.

City's Work for Consumptives.—The eighth annual report of Rush Hospital shows the admission of 102 patients during the year. The Free Hospital has as yet no building, but has cared for 124 patients in other hospitals.

Health Report.—Deaths in the city for the week ending June 23d were 380, a decrease of 75 from the previous week and an increase of 1 over the corresponding week of last year. Contagious diseases: Diphtheria, 85 cases, 20 deaths; scarlet fever, 54 cases, 3 deaths; typhoid fever, 40 cases, 5 deaths.

Forests for Consumptives.—The State Forestry Commission is to purchase 40,000 acres of land at the headwaters of each of the three principal rivers of the State in order to rear forests. This is looking forward to the future State care of consumptives and also for outdoor recreation for other invalids.

CHICAGO.

Appointment of Dr. Nicholas Senn.—Dr. Senn has been appointed Chief of the Medical Staff of the Democratic National Convention, to be held in Kansas City July 4th.

Rush Faculty Dinner.—A dinner was given at the Chicago Club on the evening of June 30th by the Rush Medical College Facuty in honor of Dr. W. W. Keen of Philadephia, at which the majority of the members were present.

Rush Medical College Commencement.—Two hundred and eight medical students were given diplomas certifying that they are Doctors of Medicine by Rush Medical College, June 21st. The commencement exercises were held at the Studebaker Theater. The Doctorate Address was delivered by Dr. W. W. Keen of Philadelphia.

Mary Thompson Hospital.—This hospital is the defendant in a suit begun in the Circuit Court by Mrs. Anna Wolff, who seeks to recover damages in the sum of $5000. The plaintiff alleges that she was a patient at the institution two years ago, and that while there she had an operation performed from the ill-effects of which she has never recovered.

Chicago Medical Society.—The annual meeting was held June 20th. The Treasurer's Report showed 944 paid-up members. Hereafter the clinical meetings of the Society will be held alternately on the North, South, and West sides of the city. The Treasurer's Report showed a balance in the Treasury of $3,004.40. The following officers were elected for the ensuing year: President, Dr. James H. Stowell; first vice-president, Dr. Alexander Hugh Ferguson; second vice-president, Dr. Adolph Gehrmann; secretary, Dr. S. C. Plummer, Jr.; treasurer, Dr. Robert H. Harvey; trustees, Dr. William H. Wilder for the Ophthalmological Society; Dr. John Ridlon for the Orthopedic Society, and Dr. E. J. Doering for the Medico-Legal Society. Dr. Maurice H. Richardson of Boston delivered an address (by invitation) on "The Surgery of Gall-Stones." A vote of thanks was extended to Dr. Richardson for his interesting address.

GENERAL.

Red Cross Japanese Ship.—Japan has fitted up a hospital ship and sent her to Taku with arrangements to receive and treat the wounded of all the Powers.

Telephone Hygiene.—In Vienna telephone booths are furnished with napkins, bearing the inscription, "Wipe, if you please." The napkins are changed frequently, and this undoubtedly serves to keep the mouthpieces of the transmitters in good sanitary condition.

The Eclectic Medical Association.—This Association closed its thirtieth annual session at At-

lantic City June 21st. Chattanooga, Tenn., was selected as the next place of meeting. The following officers were elected for the ensuing year: President, E. Lee Stanley, St. Louis; recording secretary, Dr. Pitt Edwin Howes, Boston; corresponding secretary, Dr. N. A. Graves, Chicago; treasurer, Dr. W. T. Gemmill, Forrest, Ohio.

The Plague.—A fresh case of bubonic plague was reported June 23d at Oporto, Portugal. It will be recalled that a decree was issued February 7th last announcing that the bubonic plague had disappeared from Oporto, and that the quarantine of that port had been raised. No new cases have been discovered at San Francisco and it is generall believed that the stringent measures adopted have eradicated the disease. We know, however, as the *Journal of the American Medical Association*, says, that the plague often occurs sporadically before becoming epidemic—a fact that does not increase satisfaction with the present condition of affairs. It would be most unfortunate if, through misguided public sentiment or legal interference with quarantine, the pest should gain a foothold on the Pacific coast. Twenty-five new cases of bubonic plague were officially reported at Rio Janeiro, June 26th. There have been twelve deaths from the disease during the week.

Yellow Fever in Cuba.—The outbreak of yellow fever in localities hitherto exempt from the disease is ascribed to the recent heavy rains. Major Frank H. Edmunds of the First Infantry, who died at Quemados, Cuba, on Monday of yellow fever, at the age of fifty-one years, was stationed there as acting inspector-general on the staff of Gen. Lee, commanding the Department of Havana in Pinar del Rio. He was a graduate of West Point in the class of 1871, and was a native of Michigan, although appointed from Dakota. At Quemados two new cases are reported among the members of Gen. Lee's staff—Major Kean, Chief Surgeon, and Capt. Hepburn, Signal Officer. Capt. Hepburn's case is serious, but Major Kean's is light. Mrs. Edmunds, wife of the late Major Frank H. Edmunds, is convalescent. She has not yet been told of her husband's death. Havana has developed only three cases thus far, in spite of the gloomy predictions of what would occur as soon as the rainy season, from which the city did not suffer last year, was really at hand. The situation at Santa Clara City has materially improved since the troops were ordered out of the city limits. Gen. Lee's headquarters at Quemados will probably be moved to the camp in the neighborhood of Fort Columbia.

Investigation of Malaria.—It is stated in the *British Medical Journal* that next autumn with the cooperation of the Mediterranean, Adriatic, and Sicilian railway companies, experiments will be made on a large scale as to the prevention of malarial fever among railway servants in malarious districts in Italy. At all the stations which bear the worst name in regard to this scourge the huts in which the men and the families live will be protected with mosquito netting. Similar investigations will be pursued in Sicily and Sardinia. By this combination of research it is hoped to gain an accurate idea of the regional distribution and local characteristics of malaria in Italy, and to find means of prevention adapted to the condition of the different parts of the country. Dr. Koch, in the *Deutsche medicinische Wochenschrift* of Berlin, reporting from German New Guinea, under date of April 28, regarding his investigations respecting the origin and cure of malaria, says: "We have already established the fact beyond doubt that by prophylactic and subsequent treatment with quinine even the worst infected districts can be cleared of malarial infection."

Social Features of International Congress.—August 2d: An opening evening reception will be given in the name of the Government by the President of the Council.—August 3d: Evening reception by the President of the Congress.—August 5th: Evening reception to members of the Congress at the Palace of the Elysée by President Loubet.—August 8th: Evening reception by the Bureau and Committee of Arrangements at the Palace of the Senate and the Luxembourg Garden. A fête will be given by the Municipal Council of Paris, also several under the auspices of the various Sections.—The ladies accompanying members of the Congress will be invited to all of these and a committee of ladies has been organized to receive and entertain them.

Homeopathists Meet.—The fifty-sixth annual session of the American Institute of Homeopathy began its work at Washington on June 19th and ended on June 23d. The following officers were elected for the ensuing year: Dr. W. W. Van Baum of Philadelphia, president; Dr. A. B. Norton of New York, Dr. George Royal of Des Moines, and Dr. Flora N. Ward of San Francisco, vice-presidents; Dr. Eugene H. Porter of New York, general secretary; Dr. Wilson A. Smith of Chicago, recording secretary; Dr. T. Franklin Smith of New York, treasurer, and Dr. Henry C. Aldrich of Minneapolis, registrar. A resolution was adopted on June 22d declaring that a system of interstate comity was necessary to conserve the best interest of the medical profession and protect the community against imposition, and a committee was appointed to open communication with the National Medical Association and the Eclectic Society for the purpose of bringing about cooperation in an effort to secure such national or interstate legislation. The following was adopted as the definition of a homeopathic physician: "A homeopathic physician is one who adds to his general knowledge of medicine a special knowledge of homeopathic therapeutics and observes the law of similia. All that pertains to medicine is his, by tradition, by inheritance, and by right."A statue of Hahnemann, which has been erected on the East side

of Scott Circle in Washington was dedicated on June 21st.

CORRESPONDENCE.

OUR LONDON LETTER.

[From Our Special Correspondent.]

LONDON, June 21, 1900.

THE MARRIAGE OF FIRST COUSINS—ARMY SURGEONS AND THE VICTORIA CROSS—THE GENERAL MEDICAL COUNCIL—RAISING THE STANDARD OF PRELIMINARY EDUCATION FOR ADMISSION TO THE PROFESSION—THE POLYCLINIC DINNER—ANNUAL MEETING OF THE BRITISH DENTAL ASSOCIATION—ABSENCE OF PROVISION FOR THE CARE OF THE TEETH OF POOR CHILDREN—THE CENSUS—FRACTURE OF THE SKULL MISTAKEN FOR INTOXICATION.

IN the *Polyclinic*, the journal of the Medical Graduates' College, Mr. Jonathan Hutchinson has treated the interesting and practical question of marriage of first cousins in his usual lucid and able manner. He insists that idiot and deaf-and-dumb asylums are not disproportionately peopled by the offspring of consanguineous marriages, and that many isolated communities in which more or less close intermarriage has been practised for centuries are examples of all that could be wished in physical vigor. There is nothing in consanguineous marriage which necessarily leads to deterioration. But, of course, there is in the marriage of first cousins an increased probability that whatever tendencies exist in the family, good or bad, will be transmitted, since both parents possess them. Stock-breeders do not fear to bring together first cousins and from highly incestuous unions obtain the highest class of animals. In-and-in breeding long continued no doubt inperils fecundity and may even induce defective development; but it is only as regards single instances that the question arises in human affairs. The practitioner has not to say what would be the result if first cousins married in successive generations, but only in one. Advice is seldom asked regarding more remote relationship. As regards first cousins the reply should be "There is nothing likely to be prejudicial to offspring in a consanguineous marriage *per se*, but if there be any definite tendency to such diseases as tuberculosis, cancer, or insanity, there is a risk that it may be intensified. On the other hand, if the family has a good life-history there may be greater security in such a marriage than in one with a stranger whose antecedents are less known. However, some reservation must be made as regards certain rare maladies known as "family diseases." Of these retinitis pigmentosa is the most important. Liebreich and others have shown that it probably occurs with undue frequency in the offspring of consanguineous marriages. But in general the risks of inbreeding are simply the known risks of heredity and are in no essential relation with consanguinity.

The recent accession of Surgeon-Major Babtie's name to the list of Victoria Cross holders draws attention to the fact that only about twenty-one of these coveted decorations have been bestowed on living members of the medical staff. When it is remembered that surgeons are frequently in the danger zone and that they have none of the combatants blood-lust excitement and temporary madness, their cool courage should be all the more appreciated. The list includes Surgeon-Major Reynolds who took part in the heroic defence of Rorke's Drift; Surgeon Lieut.-Col. Hartley who rescued a corporal under a fierce fire, carried him to a place of safety, dressed his wounds, and then cooly returned to his ordinary duties; Surgeon-Major Hall who proved his courage on several occasions during the Crimean War and in one instance brought in several wounded men under a hail of bullets. Others are Surgeon-Major Crimmin who in the Burmese campaign in Eastern Herenni divided his attention between attending to the wounded and killing the enemy; Surgeon-Captain Whitchurch who during the sortie from the Chitral Fort in 1895 sought to bring a wounded captain to a place of safety and after three of the dhoolie bearers were killed himself carried the captain some distance.

At the meeting of the General Medical Council Sir John Batty Tuke, Chairman of the Education Committtee, presented a further report by that body on the question of raising the standard of preliminary examination in general education. It was thought impracticable to require all intending medical students to attain the standard of the so-called senior and higher grade examinations. A substantial advance on the present requirements could, however, be made by insisting on improvements on the character and stringency which could be directly influenced by the Council.

The annual dinner of the Medical Graduates' College and Polyclinic, held at the Trocadero Restaurant, was a most successful function. It was not altogether a festive affair, being partly given with the object of raising funds for the institution. Of these it is much in need, for, having no beds and not being a hospital in the ordinary sense, but simply a college for the instruction of qualified medical men where gratuitous consultations are held on suitable and selected cases, it does not appeal to the charitable public in the same manner as a hospital. Lord Strathcona and Mount Royal, who preseided, said that the object of the Polyclinic is to bring together medical graduates to their mutual advantage. Mr. Jonathan Hutchinson remarked that there is no competition between the College and the hospitals. Within the last twenty-five years there had been no increase in the number of beds in the hospitals while the population had increased immensely. The College, instead of being regarded as a rival, should be regarded with favor by the hospitals, for it affords some protection to them against the creation of new hospitals. He hoped that an arrangement may soon

be made by which students of the Polyclinic will receive instruction in the wards of the hospitals.

The annual meeting of the British Dental Association, which was held at Leeds, proved a great success. About 250 members attended. Mr. Brunton of Leeds, in his presidential address, pointed out that the dental departments of the hospitals fail to furnish all the aid required. Statistics showed that the school children of Leeds have 85 per cent. of their teeth decayed. In the Army and Navy no provision is made for the prevention or cure of dental disease. So much health and happiness depend on sound teeth that the subject ought surely to claim some little attention from the authorities and sympathy from the public. In the public charities of Leeds every part of the human economy except the teeth is cared for. No provision is made for any conservative dental work. Prof. Smithells of the Yorkshire College read a paper on "Flame;" Prof. Goodman on "The Strength of High Pressure Gas Cylinders;" Mr. T. S. Carter on "The Treatment of Fractured Maxilla by Wire Suture Aided by the Electromotor" and Mr. T. E. Constant on "Note upon a Misunderstood Movement of the Temperomandibular Joint."

Arrangements have already been made for the forthcoming census of Great Britain which will be taken in 1901. The first of the army of 50,000 men who will have the task of counting the population have been appointed. These are merely subordinate clerks. Before the time—a year hence—when the Registrar-General's Office will be hard at work arranging and compiling the schedules gathered from every inhabited spot of England and Wales, a vast amount of preliminary work must be done. For the purpose of the census Great Britain is divided into about 640 districts, each under a superintendent registrar. Each district will contain from 2 to 12 subdistricts approximately about 2000 in all and every subdistrict is again divided into enumeration districts numbering about 40,000.

That unfortunate error of diagnosis—mistaking a case of head injury for one of intoxication, seems to recur with remarkable periodicity. The victim was Captain Robinson, a nephew of Lord Rosmead. He was knocked down by an omnibus in the Strand and taken to Charing Cross Hospital, where he was supposed to be merely intoxicated. He was removed to the Bow Street Police Station. When in his cell, seven hours after the accident, the gaoler heard groans and heavy stertorous breathing. He found the prisoner lying face downward on the floor, unconscious and bleeding from the right ear. He was subsequently taken to Kings County Hospital, where he died eleven hours later from a compound fracture of the base of the skull. The coroner's jury censured the Charing Cross authorities for not making an adequate examination. Reports of similar cases occurring in the large cities of America are not uncommon and the mistake cannot be too strenuously deplored.

OUR PARIS LETTER.

[From Our Special Correspondent.]

PARIS, June 18, 1900.

SPECIALTIES AT THE FACULTY OF MEDICINE—THE USE OF CACODYLE—RIVIERA RESORTS FOR CONSUMPTIVES—DEATH OF DR. APOSTOLI—TRANSPORTATION BY RAILWAY OF CASES OF INFECTIOUS DISEASES (GERMANY) — TYPHOID FEVER IN VIENNA—OVERCROWDING OF THE PROFESSION IN FRANCE.

IT is a well-known fact that in the Paris Faculty of Medicine there is a lack of special instruction in such branches as otology, rhinology, laryngology, and disease of the eye. This was recently made the subject of an article by De Lavarenne, the editor of the *Presse Médicale*, in which he complains of the tardiness which is shown in following the example given by the German universities. For instance, Dr. Panas, the Professor of Ophthalmology, was about to take a vacation and no professor *agrégé* on the working staff could be found to replace him. The same condition prevails in the other specialties. A country physician, Dr. Filloux, has just left in his will a provision for a prize to be given to the interne and externe who pass every year the best examinations in otology, and this tends to show that there is a general awakening to the necessity of specialization.

Cacodyle, which has attracted so much attention of late in France as a cure for consumption, is still as much talked about as ever. Introduced by Dr. Armand Gautier, Professor of Chemistry at the Faculty of Medicine, this organic compound of arsenic has been tried by a large number of physicians in the hospitals. Administered by the mouth it seems to be attended with disagreeable eructations, a taste of garlic, and even general discomfort. Used hypodermically in doses of from five to ten centigrams daily, it is free from these results. Dr. Letulle, Professor *agrégé* at the Faculty of Medicine, has tried this preparation in his sanatorium. Over a thousand injections have been made in his service during the last four or five months, and no local irritation has been produced. They are made daily for a week, then stopped for a week. The following mode of preparation is recommended by Dr. Gautier:

℞ Cocodylate of soda, 6 grams, 40 centigrams;
Distilled water, 100 cubic centimeters;
Solution of phenic acid $^1/_{10}$ VI. drops.

This preparation should be boiled, filtered on a sterilized filter, and brought up to 100 cubic centimeters. Each cubic centimeter contains 5 centigrams. The results, according to Dr. Letulle, vary according to the condition of the patient. A great number of advanced cases, suffering from fever, and in a cachectic condition, are not much benefited; but certain forms with excavations, or with softening of the tubercles, are greatly improved. The appetite returns, the fever goes down, the weight increases. As to the blood-corpuscles, Dr. Letulle's investigations

are not as yet sufficiently conclusive.

At the recent Congress on Tuberculosis at Naples a question was discussed by Dr. Hérard de Besse of Beaulieu, which is of interest to American practitioners who intend to send patients to the Riviera. Dr. Hérard spoke rather *pro domo sua*, as he is practising at Beaulieu, and his speech tended to prove that this place was an ideal resort for consumptives, presenting a torpid form without much fever. The mean temperature in winter is 11° C., while that of Naples, Mentone or Cannes is 9° to 10° C., and the climate is tonic. What Dr. Hérard calls the "home-sanatorium" is in vogue at Beaulieu; that is to say, there are small private hotels, in which there may be from 15 to 20 guests and in which the life is much more quiet than in large establishments. Nice, as a place for consumptives, is quite out of the question, as it is exposed to the wind and dust, and the changes of temperature are often extreme. Cannes and Mentone are much better, and the latter offers the additional advantage of being less expensive.

Two weeks ago, in the last days of April, there died in Paris a man, who, without having any official title in France, with the exception of that of doctor, had acquired a world-wide reputation in electrotherapeutics. I am referring to Dr. Apostoli, whose name is well-known on account of his work in the medical treatment of fibromata. Dr. Apostoli's treatment has always been looked upon with disfavor by the greater number of surgeons and it is hardly likely that any man will be found to apply with as much *éclat* the treatment he had instituted for fibroids of the uterus. However, one already receives prospectuses from electrotherapeutists, who declare that their special knowledge of this field qualifies them to undertake such treatment. Of late years, however, Dr. Apostoli had employed static electricity as a means of toning up debilitated organisms, and his praises were sung by patients who had been subjected to his treatment. His success is an example of what follows ready adaptation to the popular idol of the hour of a scientific point of view.

A recent ministerial decision in Germany as to the conveyance of cases of infectious disease is of interest. All patients suffering from smallpox, diphtheria, scarlet fever, cholera, leprosy, must be transported in a special carriage upon payment of the tariff for this mode of transportation. Cases of measles, whooping-cough, or dysentery must hire a special compartment which is shut off from the rest of the train. The transportation of patients suffering from bubonic plague is forbidden. Suspicious cases will be treated according to the terms of the medical certificate. When a patient is suffering from an affection which makes him a source of discomfort to his fellow-passengers, he is obliged to take a special compartment. Such measures, as one can see, are drastic, but will certainly be useful.

Quite a scare has been caused in Vienna by the sudden increase in the number of deaths from typhoid fever. This city has been supposed to be a model one as to its water-supply, but typhoid fever has increased notably since the beginning of the year. From the 18th to the 21st of March there were 26 deaths, while there were only 25 from the 1st of January to the 3d of February. This is quite a difference, and an investigation is being held as to the cause of this sudden increase.

Last autumn Paris was also affected by a similar outbreak, but no cause for it could be demonstrated to the satisfaction of the people who were delegated for this undertaking, though it may be that some of the sources of the water-supply are not quite pure. It is generally in the latter part of summer that a certain amount of Seine water is distributed in the different arrondissements, and from the 1st of July it is prudent to boil the water or else take some of the mild mineral waters such as Evian, Anet, and Bussang.

During the last few weeks one has heard a great many complaints in France as to the increasing number of medical practitioners. Such a complaint would seem to be justified in other countries, but in France statistics show that the number of medical men has increased very little. In 1847 for a population of 35,500,000 inhabitants there were 17,375 doctors, whereas in 1876 there were 14,375 doctors for a population of 36,000,000 inhabitants. The number has increased slightly of late years, since in 1895 there were 15,017 doctors for a population of 38,517,976 inhabitants.

This increase is all at the expense of the cities, where the doctors have more and more a tendency to establish themselves, following out in this particular case the general laws. But it is easy to see how different this is from the proportion observed in England, where there are 35,000 medical men, or in the United States, where the number it seems is close upon 100,000. The French practitioner is, therefore, much better off than his confrère in England or the United States and he has less right to complain.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Fifty-first Annual Meeting, Held at Atlantic City, N. J., June 5-8, 1900.

SECTION ON PRACTICE OF MEDICINE.

(Continued from page 934.)

THIRD DAY—JUNE 7TH.

Pathology of Rheumatism.—Dr. Riesmann of Philadelphia said that the nervous explanation of rheumatism, advanced originally by the elder J. K. Mitchell and adopted even by Charcot and later by Friedlander who placed the primary nervous lesion in the medulla, can no longer be thought at all probable. The diathesis theory,

especially that of the existence of an acidemia, is also improbable. Haig has recently called attention to this theory anew and put forward uric acid as the underlying cause. The presence of an increase of uric acid may, however, be an effect not a cause of rheumatism. As to lactic acid it seems to be proved that there is more lactic acid present in the blood of rheumatic patients. But this also may be an effect rather than a cause. The infectious origin of rheumatism is now admitted perfectly on all sides. The evidence for this origin is not direct nor *prima facie*. No specific micro-organism for the disease can be said to have been demonstrated as yet. This is, however, also true of syphilis, scarlet fever, chickenpox and smallpox, the infectious nature of which there is no doubt. It has been argued that the noncontagiousness of rheumatism and the fact that one attack does not protect against succeeding attacks are presumptive evidence that it is not infectious. Wagner of Leipsic, however, believes that he has noted the occurrence of contagion in rheumatism. It is possible that a short period of immunity from the disease occurs after an attack is over, but, as in diphtheria, this does not last long. The precedent chill which so frequently occurs and the occasional occurrence of hyperpyrexia point to the infectious nature of the disease. Rheumatism has been known to occur in epidemics. A number of house-epidemics have occurred, as in croupous pneumonia, that is, the disease has spread from person to person living in the same house.

Variations in Virulence.—Rheumatism varies very much in the number and severity of the cases which occur according to the season of the year. Carefully-collected statistics seem to show that it increases with the diminution of the rainfall and decreases when the precipitation is more abundant. This is opposed to the tradition which makes rheumatism occur especially in damp weather. The complications that occur in rheumatism, endocarditis, pericarditis, meningitis, venous thrombosis, are eminently characteristic of an infectious disease. The port of entry of the infectious material has been pointed out. Heberden first suggested that the throat was the portal of invasion. Angina has been noted in about 70 per cent. of all rheumatism cases. Otitis media has certainly been the primary focus of infection in a certain number of cases. Attacks of rheumatism have been noted to occur immediately after operations on the nose, after vaccination and after operations for fistula. It is probable also that in a certain number of cases the intestine is the port of entry. Cases of rheumatism are not pyemia, or, if so, they are very mild. The endocarditis certainly seems to proceed from a bacterial agency. It has been noted in two cases that pregnant women suffering from rheumatism have given birth to children suffering from the disease.

Kind of Bacteria.—Maclagen says that the causative agent for rheumatism is probably a miasm, that is, an agent like that which produces malaria. The analogy between rheumatism and malaria is not, however, very striking. The joint-fluid of rheumatism is as a rule sterile. Where micro-organisms have been demonstrated in it, it is hard to get away from the idea that they were due to accidental contamination. Singer made a series of examinations of the urine of patients suffering from rheumatism, and finding a number of different kinds of micro-organisms concluded that it was a modified pyemia. Chvostek repeated Singer's observation, but did not confirm his results. It is probable that polyarthritis rheumatica has not a single cause, but is due to a series of micro-organisms.

Rheumatism as an Infection.—Dr. J. J. Walsh of New York said that fifteen years ago Eichhorst in his "Handbook of Practical Medicine" transferred rheumatism from among the constitutional diseases to the class of infectious diseases. At the Charité Hospital in Berlin rheumatism finds a place in Professor Koch's department, that of infectious diseases. In the other pavilions around it are tuberculosis, scarlet fever, measles, leprosy and smallpox. The sentiment that the disease is an infectious one has been growing for a long time. Rheumatism has all the hall-marks of an infection. The prodromal symptoms, the fever, the fact that it is a self-limited disease, as was first pointed out by Austin Flint, the occurrence of complications all over the body and of hyperpyrexia, all point to an infectious disease. In autopsies made on patients who died during the acute stage cloudy swelling of the heart and of the liver and kidneys and enlargement of the spleen have been found. No definite bacterial cause can be said to have been demonstrated with certainty as yet. A form of diplococcus, has, however, been found in Germany by several observers and also by French investigators. It is probable that the ordinary form of the disease is due to this diplococcus. Anomalous cases are due to other micro-organisms and to secondary infections. Some of the rapidly fatal cases are probably due to the anaerobic bacillus which was isolated by Achalme from several fatal cases.

Treatment of Rheumatism.—For a long time the alkali treatment enjoyed a great reputation. The introduction of the salicylate has, however, pushed the alkali treatment into the background. It is the custom to say that the salicylates shorten the course of the disease, besides relieving the pain and the fever, and that they prevent to a certain extent at least the occurrence of heart-complications. Careful statistics collected at the city hospital in Berlin, in which, during alternate periods, salicylic acid and so-called indifferent treatment, that is, by means of iodides and so forth, were employed, show that this claim is not substantiated. The pain and fever are relieved somewhat sooner. The course of the disease, however, is not shortened. The heart-complications are a little more frequent and the stay in the hospital a little longer under salicylate treatment than under different treatment. The

salicylates only act as an antipyretic analgesic. Any of the other coal-tar products are just as efficient. Leyden in Berlin now uses antipyrin instead of the salicylates. Gerhardt uses phenacetin. These relieve the pain and the fever and it is claimed lessen the tendency to heart-complications. As a matter of fact, it is doubtful if the antipyretics have really not done harm in the end. They have given relief to the patient and so have enabled him to get up much sooner than he would under other methods of treatment. The only thing of any importance in rheumatism is the heart-complications. The mortality from the disease is practically nil—less than one-tenth of one per cent. For the avoidance of heart-complications, and especially to make their effect as trifling as possible, rest is absolutely necessary. Even in the healthy the heart beats ten times more per minute in the standing than in the reclining position. When fever is present it beats 20 or 30 times more per minute. This extra work at a moment when a poison that is especially liable to act upon the heart is present is the occasion for the development of severe heart-complications.

Rheumatic Endocarditis of the Essence of Rheumatism.—Although called such, rheumatic endocarditis is not a complication but just as essential a part of the disease as the joint-affections. The endocardial process begins on the edges of the valves where they come in contact. The endoarthritic process begins at the points of contact in the joints. We can not hope, as a rule, to prevent the spread of rheumatism from one joint to another. Neither can we keep it from affecting in most cases the joints, so to speak, of the heart. So-called heart-complications occur in from 50 to 75 per cent. of all cases of rheumatism. In patients under fifteen years of age the heart is affected in from 80 to 90 per cent. of the cases. Not infrequently the endocarditis is the only lesion of rheumatism present. It runs its course without affecting any of the joints, but is just as truly rheumatism as if all the joints were affected. The one hope in rheumatism is to lessen the work of the heart, not only during the acute course of the disease, but more particularly afterward when the inflammatory exudate on the valves is in a plastic condition, and may be reabsorbed under the influence of the iodides. The treatment for rheumatism, then, is not the antipyretics, the salicylates, antipyrin, etc., except in as far as these are necessary to relieve symptoms. The iodides and rest with proper diet are the most hopeful remedies we have.

Chorea and Rheumatism.—Dr. Charles W. Burr of Philadelphia said that in chorea there is frequently a history of precedent rheumatic fever, especially a story of pain, rheumatic in character. It is well known too, that children who have St. Vitus' dance are more liable later in life to attacks of rheumatism. At autopsies made on children suffering from chorea the one lesion that is found in practically all the cases is valvular heart-disease. In nearly all of the cases collected by Dr. Osler this was true. Dr. Burr, himself, has seen the autopsies of three cases in which valvular endocarditis was present. Rheumatic sore throat not infrequently precedes the development of St. Vitus' dance. The connection, then, between these two diseases seems clear. Yet clinically it is hard to reconcile the manifestations of St. Vitus' dance with rheumatism. As we see them, the patients are often strong, well-built children, who have suffered from a fright or some severe emotion, or who from overwork or overstudy (especially overdevotion to piano practice in young girls), develop the choreic movements which characterize the disease. This certainly does not look like an acute infection and has no similarity with acute rheumatism. The connection between the two diseases has become a tradition in medicine, however. Recent French observers have claimed the discovery of a microbe in the blood of patients suffering from St. Vitus' dance which when injected into animals produced choreic movements. The observations are, however, too few to justify any conclusions in the matter, and as St. Vitus' dance looks entirely unlike an acute infection the question remains an open one. Further study will be well repaid if it shows us the reason for the coincidence of the two diseases.

Heart in Rheumatism.—Dr. Delancey Rochester of Buffalo said that heart-affections occur after rheumatism in 60 per cent. of the cases. The younger the patient the greater the liability to heart-trouble. Sir William Watson saw only two cases of rheumatism in children before puberty that did not develop endocarditis. Endocarditis is as essential to the disease as are the joint-affections. More common even than endocarditis is myocarditis. Some affection of the heart-muscle occurs very early in the disease. The heart-murmur in rheumatism is often due to myocarditis. It can be observed before the time when any mechanical interference with the valves from endocarditis could have occurred. A corresponding murmur is heard in anemic cases. Pericarditis is not so common, but occurs in nearly ten per cent. of the cases and should always be looked for. Murmurs heard at the base of the heart in rheumatism are nearly always due to pericarditis. They may also be heard in the third or fourth interspace along the sternum and may be taken for tricuspid murmurs. Certain observers have noted a separation of the left clavicle from the first rib, because of the bulging pericardium. One of the striking features of rheumatic pericarditis is the frequent development of nervous symptoms. The interference with the blood-supply to the brain is responsible for them. They may be so severe as to arouse a suspicion of meningitis. When delirium occurs in rheumatism, look for pericaditis. Not infrequently the presence of a pulsus paradoxus will call attention to the existence of a pericarditis. The usual physical signs will be found on examination of the chest.

Arthritis Deformans.—Dr. A. O. J. Kelly of Philadelphia said that the name arthritis defor-

mans is less objectionable than rheumatoid arthritis, for the disease has nothing to do with rheumatism, or than rheumatic gout, for the disease is far from being a hybrid combination of rheumatism and gout. The features of interest in the disease is its pathogenesis. There are not only joint-lesions in the disease but pathologic conditions of the muscles and the vasomotor system. The disease is not due to anemia, nor is it due to uterine reflexes, or to wear and tear of the system, for, although these have been set down as causes, they are not sufficient to explain the origin of the disease. Two theories for its etiology seem worth considering, *viz.*, the neural and the bacterial. Neither one of these is sufficient of itself fully to account for the disease and both are probably concerned in its etiology. There is no doubt that emotion, fatigue, fright, and such conditions, have a causal relation to the disease. It also occurs during the menopause and after frequent pregnancies and prolonged lactation. These point to its neurotic origin. Garrod has collected five hundred cases of the disease and only 89 of them in men. It is evident, then, that the nervous element must be given a place in the ultimate pathogenesis of the disease. Vasomotor and the trophic changes are very noticeable. Ataxic joints represent a very similar condition. The disease has been called a trophoneurosis. Peripheral neuritis has been found in some cases and spinal changes have been noted in a few instances. These substantiate the nervous theory and yet leave the cause of the disease obscure since they do not occur in all cases. In tabes, lateral sclerosis and syringomyelia nervous lesions are invariably present. The reflex action of the uterus in the disease is at least doubtful since the uterus is under the domination of the sympathetic system rather than of the cerebrospinal axis.

Bacteria in the Disease.—A number of bacteria have been found in the disease. Their causative relation is in doubt. The results of inoculation are very indefinite. Chiffard and Raymond describe what they call a slender diplococcus which was found in the disease. This was found not only in the joints, but also in the glands in the neighborhood of affected joints. It is well known that arthritis deformans occurs as a sequel of other infectious diseases. The bacterial influence in the disease seems undoubted. The disease is not a pure trophoneurosis, but an infectious trophoneurosis. It is not a peripheral neuritis, since changes in the peripheral nerves are not constant. The spread of the disease is usually centripetal, but this does not point necessarily to the nervous origin of the disease and, besides, its progress is sometimes irregular and not centripetal. The muscular atrophy that is noted in the disease resembles somewhat that due to joint-lesions, but not entirely. It is not as gradual as atrophy from joint-disuse. There is a mixed cause, a toxic element in conjunction with the nervous basis. The affection of the muscles resembles that caused by the neuritis set up by such toxins as diphtheria or by alcohol. The analogy is certainly sufficient to put beyond all doubt the existence of a bacterial element in the etiology of the disease.

Rheumatism an Infection.—In discussing the papers on rheumatism Dr. Frederick Packard of Philadelphia said that one of the evils of modern medicine is snap diagnosis, words taking the place of ideas. It is easy to say "rheumatism" where pain exists and lo! a diagnosis is made. One of the greatest clinicians in the country is accustomed to say after careful examination of a patient, "Now this is chest; this is abdomen," and will not say more until he has studied the case very seriously. In the old days the word dropsy occupied a place corresponding to rheumatism in our day. It was a convenient word, but expressed absolutely no definite idea. We talk of rheumatic angina, of rheumatic endocarditis, of rheumatic pleuritis, terms that serve only to mask for us the true condition. Like scarlatinal and gonorrheal rheumatism they should be expunged. There seems no doubt now that acute arthritis is an affection due to a specific microorganismal cause. Secondary infections there are and infections that resemble ordinary acute arthritis. When we have said this, however, a number of problems remain to be studied. Why, for instance, are chorea and endocarditis so intimately associated with rheumatism? Why do eczema and rheumatism sometimes seem to be connected? It is clear that more lactic acid is present in the blood during rheumatism than at other times. This seems, however, to be an effect not a cause. Benjamin Ward Richardson's experiments, by which he demonstrated that the injection of lactic acid into animals produces heart-complications and arthritis, are not enough in themselves to demonstrate that lactic acid is the important causal element in rheumatism. The infection in rheumatism usually takes place from the throat.

Dr. Musser said that rheumatism now seems beyond all doubt to be an infection. It is not a single disease, however, but a combination of many types of disease which we are as yet unable to distinguish. It remains for the clinician to point out the differential diagnosis of the various forms of the disease, for this will materially aid in the exact treatment of the condition. The field is a most precious one for ambitious investigators.

Dr. J. M. Anders of Philadelphia said that chorea seems to occur especially in those of the rheumatic disposition. Rheumatism certainly often follows in later life. The endocarditis that is noted so often in chorea is an effect and not a cause of the disease. The murmur that is noted is sometimes functional. Just as the muscles of the limbs refuse to act properly, so the muscles of the heart do not act as usual and murmurs result. At times fever is noted in chorea and then it will not infrequently be found that acute endocarditis may exist as a complication of the disease. This should be looked for carefully, as its

bad effects can to a great extent be avoided by proper treatment.

Osteomyelitis and Rheumatism.—Osteomyelitis is sometimes mistaken for rheumatism. Dr. Anders has recently seen two cases. Osteomyelitis, however, never occurs in a joint, but in a long bone, although it may be in the vicinity of a joint. With care the joint can be moved without producing pain, while this cannot be done if the case is rheumatism. Besides, osteomyelitis occurs, as a rule, in but one place while rheumatism is usually polyarticular. It must be borne in mind, however, that in certain cases of subacute osteomyelitis and these are the ones that are liable to be confounded with rheumatism the foci of suppuration may be multiple.

Dr. Charles G. Stockton of Buffalo said that heredity undoubtedly plays a rôle in the causation of arthritis deformans. It seems old-fashioned to talk about the arthritic diathesis, but in this disease, at least, a truth is expressed by the term that might otherwise be lost sight of. It is probably in the nerves that the heredity basis of the disease is situated. It must not be forgotten that meteorological conditions affect joints. There are old people who are able to foretell the changes in the weather. It is probable that the changes in joints which cause this discomfort are also predisposing conditions for rheumatism.

Dr. Bishop of New York said that, although the infectious nature of rheumatism is becoming more and more clear, we cannot get away entirely from the idea that the cause of the disease is some defect in the chemistry of the body. Rheumatism is certainly a nutritional as well as an infectious disease. Acute articular rheumatism is a specific infectious disease, the predisposition to which is acquired by disturbances of metabolism.

Dr. H. D. Favil of Chicago said that we must wipe off the slate and begin anew our studies of the etiology of rheumatism. The infectious element now seems certain. The diathetic element is losing some of its old potency in the disease, but cannot be neglected entirely.

Dr. Birnie of Maryland said that an important element in rheumatism on which sufficient stress is not usually laid is that it is a self-limited disease. It is probably true, as Dr. Walsh said, that no drug serves to shorten the course of the disease. Rest in bed and careful diet are the important remedies for lessening the number and severity of heart-complications. The iodides, potassium iodide and ferric iodide, used after the acute stage, are very beneficial drugs. The symptoms pains and fever must be relieved, but their relief must not be followed by allowing the patient to be up and around before convalescence is fully established.

Rheumatism Precedes Chorea.—Dr. J. J. Walsh said in closing the discussion that chorea is a nervous disease. Its motor symptoms are due to irritation of the cells of the cortex. This irritation is due to disturbances of the blood-supply. The disturbances of the blood-supply are consequent upon chronic endocarditis. The one lesion that is constantly found at autopsies in cases of chorea is chronic valvular disturbance from endocarditis. After a fright, or a severe emotion, or after overstudy or overwork, this disturbance of the circulation becomes manifest. The chronic endocarditis is due to a precedent attack of rheumatism which ran its course either in infancy and was completely ignored, or a little later in life and was set down as growing pains, or was insidious, as a rheumatic endocarditis without joint-lesions. It is the occurrence of the earlier attack of rheumatism that makes these children liable to rheumatism later in life. Chorea follows, however, not only rheumatism but any infectious disease which affects the heart. Of late years particularly it has been known, although more rarely than rheumatism, to follow measles and scarlet fever and even mumps and chicken-pox.

Dr. Delancey Rochester said that rest is extremely important in rheumatism. The occurrence of endocarditis does not contraindicate the use of the salicylates. Saline cathartics should be used freely and the patient should be wrapped in blankets rather than sheets, and should be made as comfortable as possible for his six to eight weeks of rest in bed.

Malignant Endocarditis.—Dr. N. S. Davis, Jr., of Chicago reported a case in which frequent chills and fever had occurred without any cause being traceable except malignant endocarditis. The patient ultimately recovered. It seems probable that in this case the site of primary infection was in the digestive tract. The patient had suffered for a long time from chronic gastritis. In another case under Dr. Davis' care the primary seat of infection seemed to be a chronic enteritis. Dr. Davis thinks that we cannot draw any hard and fast lines between simple and malignant endocarditis.

Muscular and Valvular Heart-Lesions.—Dr. S. Solis-Cohen of Philadelphia said that in most cases the site and nature of the valve-lesion in heart-disease is much less important than the state of the cardiac muscle. The most important exception to this rule is mitral stenosis with extreme narrowing. Aconite is often a useful drug to reduce the excessive muscular effort in this condition and its employment must not be neglected. In some cases in which none or but very slight valve changes can be demonstrated, there may develop signs of severe cardiac insufficiency due to lesions of the myocardium. The physical signs of myocarditis are inconstant. Where there are no valve-lesions intermittence or irregularity of the pulse and precordial pain in non-neurotic subjects are the symptoms that call attention to the myocarditis. Tinitus, vertigo, dyspnea, visceral congestion and edema may be slight and escape notice. Usually the first sound of the heart is weak and distant and the two sounds become more nearly alike, the second sound being accentuated. Later embryocardia and galop-rhythm may develop. Gout, syphilis, alcohol and

tobacco, tea and coffee, sexual excesses, mental strain and physical overwork are the chief causes of disease of the myocardium, apart from lesions that are due to acute infections or are secondary to nephritis or valvular disease. Influenza is a frequent cause of myocarditis.

Diagnosis of Myocarditis.—We have not sufficient clinical knowledge as yet of the disease to permit of its assured recognition antemortem. The differential diagnosis between neurasthenia of the heart and disease of the myocardium may be extremely difficult. It is important to avoid error, for the prognosis and treatment of valvular disease depend mainly on the proper estimation of the condition of the heart-muscles. Failure to recognize the presence of myocarditis may be very serious if a heart should be judged to be normal because of the absence of murmurs and the patient be advised accordingly. If the presence of myocarditis is recognized the treatment consists of judicious regulation of the diet and exercise, the avoidance of the exciting causes mentioned and of excesses of every kind, with the regulation of the habits of life, so as to secure a good functional condition of the skin and other eliminative organs. Warm saline or carbonated baths and in most cases gentle massage, with resistance exercise carefully adapted to the individual cases, are of great benefit. Nitroglycerin is the most useful single agent of the materia medica. Strychnine, digitalis cactus, strophantus and spartein are useful in special cases. Arsenic, gold and sodium chloride and iron are the most suitable tonics. Potassium iodide and mercurials have special indication in many cases. Venesection should be done promptly and in sufficient amount if sudden and urgent symptoms of cardiac failure develop.

Clinical Myocarditis.—Dr. Bishop of New York said that myocarditis is much more frequent than has been thought. Its recognition is extremely important because on it depends the prognosis of many cases. The myocardium and its affections are even more important than the pericardium and the diseases to which they are liable. The most important causes of myocarditis are rheumatism, syphilis, gout, alcoholism and the other intoxications, and arterial diseases. Arteriosclerosis is an especially important etiological element in the production of myocarditis. Dr. Bishop then discussed a series of cases of myocarditis in which the irregularity of the cardiac rhythm was the most striking symptom of the heart-affection. In the treatment of these cases he has found the Schott method of carbonated baths, with resisted movements, especially useful.

Rational Prognosis in Heart-Affections.—Dr. J. J. Morrissey of New York said that in making the prognosis of heart-affections it is important not only to estimate the nature and extent of the changes which have occurred in the heart itself, but also the condition of other important organs of the body far removed from the thoracic cavity, but dependent on the proper continuance of the circulation for their perfect functioning. The history of cases is extremely important because it enables us to judge of the progressive character of the affection and how rapidly degenerative changes take place in the heart itself and in the organism. The mere finding of a heart-murmur is not sufficient to justify a gloomy prognosis. The condition of the cardiac muscle, the length of time the lesion has existed, and the presence of dilatation, or hypertrophy, or both, are important factors in modifying our prognosis. The occupation and temperament of the patient are very essential elements to be considered for making our prognosis. The diagnosis should be complete, the prognosis tentative. As Professor Allbut says, "Give your prognosis on the best suppositions; treat your patient on the worst."

Murmurs and Prognosis.—Murmurs do not invariably mean endocarditis. The prognosis based simply on a murmur is utterly unjustifiable. It has been well said that, with an apex beat in the normal situation and regular in rhythm, the ausculatory phenomena may be practicalyl disregarded. It must not be forgotten, especially, that a presystolic murmur does not always indicate the most serious of all lesions, namely, a mitral stenosis. A so-called musical apex murmur has no special significance in prognosis, as it indicates nothing more than the passage of a stream of blood through a small aperture in the segment of the valve. As regards longevity, aortic stenosis is a favorable lesion and Dr. Morrissey differs from the authors who state that it appears for the most part after middle life. It is often found during that period when a man should be at the highest point of physical capacity—between thirty and forty. It is frequently present, it is true, as a part of general decay, as a consequence of atheromatous changes in the vascular system. But it is more frequently present than has been hitherto suspected, without necessarily involving such pathological manifestations. It is important not to alarm a young man by the diagnosis heart-disease, because some hypertrophy of the heart is discovered. These athletic hearts may occur in the midst of perfect health and yet life be embittered by the suspicion of heart-disease aroused by the injudiciousness of an attending physician. Patients should be told to return for further examination when the mind cannot be thoroughly made up as to what condition is present. An interval of a very short time may cause the disappearance of apparently significant symptoms. There are more snap diagnoses of heart-disease than of any other condition, and more of them are wrong.

Statistics of Heart-Disease.—Dr. Morrissey has had under his care 255 cases of cardiac disease. Of these 69 suffered from aortic disease, 18 were cases of pure aortic insufficiency, six of aortic stenosis, and 45 of aortic insufficiency and stenosis; 185 suffered from mitral lesions, 95 from mitral insufficiency, 74 from mitral insufficiency and stenosis and 14 from mitral stenosis. In only two cases did there seem to be fatty degeneration

of the cardiac muscle. Dr. Morrissey is of the opinion that fatty degeneration of the heart is diagnosed much more frequently than there is any justification for in the physical signs or the rational symptoms presented by patients.

Endocarditis and Myocarditis.—In the discussion of heart-diseases Dr. Frank Billings of Chicago said that ulcerative endocarditis is much more frequent than has been thought. When intermittent fever occurs and no malaria can be demonstrated, or remittent fever and typhoid fever and tuberculosis can be excluded, it is always probable that ulcerative endocarditis is present. Myocarditis is also more frequent than has been thought. Its foundations lie in faults of nutrition in the gouty and other diathesis, in imperfect digestion and absorption, and its first symptoms are often an irritability of disposition, the symptoms of indigestion, a lessened amount of urine, an enlarged liver and other symptoms which point to disturbances of the capillary circulation.

Dr. Herrick of Chicago said that for the prognosis of heart-disease the condition of the heart-muscle is more important than the determination of the exact site of the valvular defect. He saw not long ago an old man of sixty-nine who had been told by Skoda of Vienna thirty-seven years before his death that he had heart-disease. By careful living he succeeded in living on absolutely without cardiac symptoms almost to his seventieth year.

Dr. Fussell said that certain symptoms are given too great significance in heart-disease. An increase in the area of heart-dulness, for instance, is only significant if persistent and if compensation fails. An easily-recognizable condition which will often raise suspicion of heart-disease is the existence of a fringe of dilated veins along the costal margins.

Occupation and Tuberculosis.—Dr. Freudenthal of New York read a paper on this subject, which will appear later in the MEDICAL NEWS.

Prebacillary Stage of Consumption.—Dr. J. M. Anders of Philadelphia said that the most important thing in the treatment of pulmonary tuberculosis is an early assured diagnosis. It is possible to recognize the disease with reasonable certainty before tubercle bacilli are demonstrated in the sputum. The Roentgen rays are an important aid to this prebacillary diagnosis. The shadow of beginning consolidation at the apex of a lung is distinctly darker than the surrounding tissue long before the presence of the lesion can be demonstrated by percussion or auscultation. The diaphragm on the side on which the lesion exists can also be seen to make shorter excursions than on the healthy side. The tuberculin test, used with proper precautions, can also be of the greatest service for early diagnosis. A reaction to tuberculin will make an assured diagnosis long before the physical signs are sufficient to justify more than a vague suspicion. The careful history of the case will often lead to a very probable diagnosis of tuberculosis when the physical signs are insufficient to raise more than a suspicion. Antiphthisical treatment is often indicated before tubercle bacilli can be demonstrated in the sputum. It must be remembered that tubercle bacilli may often remain encapsulated in the pulmonary tissue, or at least shut off from any connection with the bronchi, until the disease has made extensive inroads. The modern treatment of consumption can only do good in any case, and, if the patient has been losing weight and a suspicion of tuberculosis exists, the open-air treatment of the disease should be instituted until the patient recovers the weight lost. If tuberculosis were treated always in the preliminary stage, there is comparatively little danger of death from the disease. Suspicion, then, if well grounded, should be enough to cause the physician to insist on the change of life necessary to institute proper hygienic measures.

Rest in Tuberculosis.—Dr. Carroll E. Edson of Denver, Colorado, insisted on the importance of rest in pulmonary consumption. His paper will appear in full in the MEDICAL NEWS.

Serotherapy of Tuberculosis.—Dr. C. P. Ambler of Asheville, N. C., presented the report of 106 cases of pulmonary tuberculosis in all stages treated by antituberculous serum. After a year and a half of observation he is now able to confirm the report read before the Section on the Practice of Medicine at Columbus last year. This year's experience confirms the conclusion that tuberculous patients treated with serum do not relapse as do those treated with creosote and other allied drugs. Cases of tuberculosis recognized early in the course of the disease can be absolutely cured and practically assured against relapse by this treatment. The symptoms of patients in advanced stages of the disease can be relieved better by this method than by any other. The comfort of the patient is especially assured and the course of the disease is rendered slower than by any other treatment.

Nitrogen Injections for Pulmonary Tuberculosis.—Dr. A. F. Lemke of Chicago read a paper on tuberculosis of the lungs treated by compression with nitrogen after the method of Murphy, with some remarks on the *rationale* of the procedure and a record of experiments upon dogs. Dr. Lemke said that compression for pulmonary tuberculosis is suggested by clinical evidence. Stokes says, "In many cases where pulmonary tuberculosis complicated by pneumothorax becomes chronic, we may observe a singular suspension of the usual symptoms of phthisis. The sweats cease, the pulse becomes quiet, the patient may gain flesh and strength to a surprising degree." Jaccoud, Williams, Cornet, Osler, Fowler, Godlee and Paget give confirmatory cases. Pathological evidence in favor of this view is found in the writings of Hughes, Rokitansky, Watson, Späth, Rosenbach and others. Laennec once said, "No consumptive succumbs to a first attack of consumption." Tuberculous lesions always heal by cicatrization. The rational proceeding is to further the natural tendency to cic-

atrization. The danger from tuberculosis lies in the dissemination of the disease throughout the lungs or the body. The paths of dissemination are first, by continuity and contiguity and, secondly, throught the air-channels, the lymph-vessels and the blood-vessels. Compression favors fibrosis in and about tuberculous areas. It occludes the avenues of dissemination of the virus and by compressing cavities puts them in a favorable mechanical condition for healing. Indirect favorable effects of the compression are, first, rest to the lung as a whole; second, the evacuation of secretions by the pressure exerted; third, the prevention or diminution of absorption of toxic substances; fourth, the prevention of secondary infection, and, fifth, the diminished tendency to hemorrhage.

Observed Effects of Compression.—There is good evidence that it furthers the natural tendency on the part of the tissues to cicatrize. Clinically it is an excellent palliative remedy, for it diminishes cough, expectoration and sweating, lowers fever and causes an almost immediate tendency to gain in weight. There is not any evidence that fresh tubercles can develop in a compressed lung. There is now good clinical and experimental evidence that healthy lung-tissue may be compressed for a year or more and yet retain its capacity for expansion upon the removal of the pressure. Experiments upon dogs were detailed in which the left pleural cavity was injected with nitrogen or normal salt solution every two weeks during a period of eight months. The changes that took place were of not a character to determine permanent effects upon the lung-tissue.

Technic of Nitrogen Injection.—The nitrogen is injected through an ordinary exploring needle inserted in the anterior axillary line, at its intersection with the mammillary line. The average quantity of nitrogen which may be introduced into the pleural cavity without untoward effect is 120 cubic inches. The actual risks of the operation of intrapleural injections of nitrogen are extremely small. Accidents have not been reported since the first report was made. Subcutaneous emphysema has not occurred in any case since the adoption of the intercostal splint.

Uses of Intrapleural Injection.—These may be summed up as follows: (1) They are curative in pulmonary tuberculosis in its incipient stages. (2) They are palliative in cases in which the disease is too extensive to hope for recovery and give a prolonged life for weeks or months in comparative comfort. Besides, they greatly diminish fever and expectoration. (3) One of the most useful purposes of these injections is to check pulmonary hemorrhage; cases have been reported in which intrapleural pressure at once stopped the hemorrhage after all ordinary measures had failed. (4) They compress cavities and so establish mechanical conditions that will permit healing. (5) They serve a useful purpose in compressing the lung just prior to operation in which the pleural cavity is to be freely opened, and they can be used to determine the presence or absence of pleural adhesions, before opening the pleural cavity in order to drain abscesses or bronchiectatic cavities, cysts, etc. These cases in which it has been useful to surgeons are most interesting.

Silver Injections Over Vagi Nerves.—Dr. Thomas J. Mays of Philadelphia made a further report on his method of treating consumption by the injection of silver nitrate along the course of the vagi in the neck. The counterirritation produced stimulates the vagi and, as these nerves carry trophic influences to the lung, the lung conditions are modified, the resistive vitality is increased and the tuberculous process is gradually overcome. The injections are made by lifting up the skin over the vagi and throwing in a quarter of a grain of nitrate of silver. As the injection is painful, a preliminary syringeful of weak cocaine solution should be used. Even before the injections are made, the nerve will sometimes be found to be tender along its course on the affected side. Dr. Mays has now used this method in over a hundred cases and he has obtained with it better results than with any other.

In the discussion Dr. Vaughan of Ann Arbor said that the development of tuberculosis in patients suffering from argyria is not unusual. The use of nitrate of silver, then, does not seem very promising.

Dr. Delancey Rochester said that tuberculosis is often disseminated through tailors. The thread is frequently passed through the mouth and the hands are not kept clean while handling the clothing. Thus, the seeds of the disease are carried into families where it did not exist before. Exercise, he said, is bad for consumptives, not only because of the exhaustion it produces, but also because the deep inspirations necessitated by exertion lead to the carrying of particles of tuberculous material into other and as yet unaffected portions of the lungs.

Dr. S. Solis-Cohen said that a very important aid in the diagnosis of incipient tuberculosis is the daily temperature. Usually it is highest from twelve to two. An inverse temperature-course, that is, with the highest point in the morning, is always suspicious of tuberculosis.

Dr. S. Knopf of New York said that the two secrets in the treatment of consumption are not to treat the disease, but the patient, and, secondly, not to consider that any particular climate is specific, but that the open air will cure any incipient case of tuberculosis. Besides tailors, there are two other classes of workmen who are especially liable to tuberculosis. They are the helpers in laundries who sort the soiled linen and workmen engaged in sorting rags. With regard to the rest-cure in tuberculosis, there is one danger that must be borne in mind, *viz.*, the development of hypostatic congestion if patients are kept continually in one position. Massage is an important remedy in tuberculosis, giving, as it does, exercise without fatigue. Creosote is not followed by any special tendency to relapse. Landouzy controls

cough by the injection of sterilized water, just under the clavicle. Cough is best controlled by discipline.

FOURTH DAY—JUNE 8TH.

Diagnosis of Diabetes.—Dr. James B. Herrick of Chicago said the diagnosis of diabetes ultimately depends in all cases upon the detection of sugar in the urine. As the urine of all patients cannot be examined, it is important to recognize the symptoms that point to the existence of sugar in the urine and so awaken the doctor's suspicion. A number of nervous symptoms occur very early in the disease. Sexual impotence is often the first sign of the existence of diabetes. Although Naunyn thought differently, psychic illusions are quite common in Dr. Herrick's experience. Irritability and a change of disposition are often the first sign. There are three causes why diabetes is missed by the practitioner, *viz.*: (1) The urine is not examined; (2) sugar is not present, or (3) it is present only intermittently. Other features of the disease may overshadow the fundamental affection. Albuminous urine and the occurrence of casts may lead to the diagnosis nephritis when the true condition is really diabetes. Casts are sometimes a warning of the approach of diabetic coma. Sugar may occur even in urine of low specific gravity. This is true (*a*) if patients are very weak; (*b*) if interstitial nephritis is present, and (*c*) if large quantities of liquid have been taken shortly before the examination is made. The urine of every case of pulmonary tuberculosis and of obscure coma should be examined carefully. For purposes of treatment and prognosis the character of the diabetes should be recognized. The diet of diabetics should never be too strict, otherwise serious complications may be precipitated. The presence of obesity usually adds to the favorableness of the prognosis. The condition of the pancreas and the liver should be made out as far as possible in order to give more certainty to the prognosis.

Increase of Diabetes in New York.—Dr. Heinrich Stern of New York discussed the mortality from diabetes mellitus in New York since 1894. During these six years there have been 1867 deaths from the disease. Of these 931 almost exactly half have been in women. Before this the disease was considered to be from two to two and a half times as frequent in men as in women. The present statistics are probably an indication that, in the struggle for existence, woman is no longer exempt from the strenuous life. While the total death-rate in New York has declined from 25 per 1000 to about 18 per 1000, the death-rate from diabetes has increased from $2^1/_2$ per cent. in 1894 to over 5 per cent. in 1899. The number of deaths are approximately the same throughout the different parts of the year. Five per cent. of the deaths occurred in persons over 45 years of age. The occurrence of nervous manifestations about the time of the menopause makes the death-rate from diabetes in women very high during the years between forty-four to forty-eight. In the cases under twenty the number was equally distributed between males and females, which seems to show that the same conditions of life prevail for both sexes at this time. During eleven years in New York only fifteen deaths from diabetes were reported in the colored race. This means, perhaps, no more than that the disease fails of diagnosis among these people, who are notoriously known to be satisfied with a home-made diagnosis and many of whom are afraid of hospitals. The increase in the death-rate from diabetes in general does not, perhaps, mean more than a better recognition of the disease than previously.

Skin Symptoms of Diabetes.—Dr. Milton D. Hartzell of Philadelphia said that certain cutaneous symptoms are so commonly associated with diabetes that they had been called by Fournier diabetic skin-diseases. Pruritus is the most common of these. It occurs especially about the genitalia and down the thighs and may give rise to the most intense itching. Scratching may lead to the development of eczema. There is nothing peculiar about the pruritus and eczema except their location. Preputial inflammation is very common during diabetes and may lead to thickening of the foreskin and the occurrence of fissures. Balanoposthitis occurs as a consequence of retention of urine behind the foreskin and the fact that the sugary urine forms such an excellent culture medium for the micro-organisms. Pustular acne is a very common condition in advanced diabetes. Crops of furuncles and of carbuncles are frequent. It is estimated that more than one-third of the cases of furunculosis and multiple carbuncle are due to diabetes. Papillomatosis diabetica has been noted in at least one case as a fungating, capillary mass on the back of the hand. Moist or dry gangrene of the skin is a not infrequent complication of diabetes. It may occur in a single or in multiple patches. At times it is symmetrical and may be mistaken for Reynaud's disease. It can be differentiated from this, however, by the absence of the preliminary disturbances of the vasomotor mechanism which are so characteristic of Reynaud's disease. Kaposi has reported certain cases of bullous gangrene which began as dark-colored vesicles and then spread. Xanthoma diabetica deserves the name because it occurs nearly always in connection with glycosuria. It consists of patches of red flat papules on the knees, elbows and buttocks. Dermatitis herpetiformis has been noted occasionally in connection with diabetes. The deposit of pigment in the skin in certain cases of the disease has given rise to the term bronze diabetes. This type of diabetes has been studied especially by French authorities. The treatment of the skin-complications of diabetes should be preventive. It consists in the most scrupulous cleanliness. Eczema and other skin-diseases will frequently resist all local treatment unless the diabetic condition is improved by proper treatment, hygienic and dietetic.

Early Diagnosis.—Dr. S. Solis-Cohen in the discussion said it should be borne in mind that glycosuria is not diabetes. Glycosuria may be noticed particularly after certain of the infectious fevers. After influenza it is not infrequent. Patients must not be disturbed by the announcement of the existence of diabetes until the physician has assured himself that the condition is persistent. It is important to remember that albuminuria may coexist with glycosuria and the finding of albumin in the urine should not keep the physician from looking for sugar. The only way to avoid missing cases of diabetes is to examine the urine of every patient even although the complaint be nothing more than an ingrowing toe-nail. This is evidently not feasible. Hence, the suspicious symptoms should be borne in mind. The nervous symptoms should especially call attention to the urine; and of these bilateral sciatica is one of the most characteristic.

Increase of Diabetes.—Dr. J. J. Walsh of New York called attention to the fact that according to the mortality statistics diabetes is very much more frequent in this country than it was ten years ago. Insurance companies are now refusing three risks for diabetes to one refused ten years ago. Dr. Stern has pointed out that diabetes in New York is nearly three times as frequent as it was only six years ago, although the general mortality of the city has decreased by one-fourth during the same period. This increase of diabetes is probably apparent and not real and is due to the fact that the disease is more often recognized than it used to be. Two fatal diseases especially are mistaken for diabetes—pulmonary consumption and chronic nephritis. The sugar in the blood of diabetics makes it an excellent culture medium for the tubercle bacillus. Practically all the slow-running cases of diabetes die of pulmonary tuberculosis. To permit a diabetic patient to associate with those affected with tuberculosis is almost inevitably fatal. When diabetics become affected with tuberculosis the loss in weight and other symptoms of the diabetes are attributed to their tuberculosis and the underlying disease remains unrecognized. Almost the same thing happens with regard to nephritis. Some irritability of disposition is perhaps the first symptom that calls attention to the condition of their urine. An examination is made, albumin is found and casts, both these abnormal constituents being frequently present in diabetic urine; sugar is not looked for and the case is considered to be simply one of advanced nephritis.

Dr. Morrissey of New York called attention to the fact that glycosuria frequently exists in tuberculosis. In a hundred cases carefully examined for this purpose, he found at least traces of sugar in the urine of over 30 per cent.

Dr. Roussel of New York called attention to the fact that sugar may occur in the urine in cases of myxedema. In an undeveloped case of myxedema recently under his care the patient was treated for a long while for diabetes, but without marked improvement. The sugar disappeared as soon as thyroid was administered and the symptoms of myxedema were gotten under control. The sugar remained absent as long as the thyroid treatment was kept up, but returned when the patient after a year, under the impression that her cure was complete, stopped thyroid medication for a time. In these incomplete cases of myxedema both sugar and albumin occur in the urine and they may be mistaken for either diabetes or nephritis.

Dr. Osborne of New Haven said that in only about fifty per cent. of the cases of diabetes is there found on postmortem a lesion of the pancreas. The remaining 50 per cent. are due to lesions of other organs than the pancreas. A number of patients who have Graves' disease suffer from glycosuria. Most of the patients with severe Graves' disease die either of diabetes or tuberculosis. Acromegaly is often complicated by diabetes. In all of these obscure conditions of glands having internal secretions, careful examinations of the urine should be made in order to detect the presence of sugar. In pancreatic diabetes regulation of the diet does good. In diabetes from other causes even a strict diet has not much effect.

Distribution of Diabetes.—Dr. Herrick of Chicago said that it is computed from statistics in Berlin that there is more diabetes in the upper 10,000 than in the lower 100,000. Perhaps this infrequency of diabetes among the poor accounts for its rare occurrence among the negroes in this country. Dr. Herrick has seen diabetes in a negro but once. Obesity makes the prognosis of diabetes much better. What has been called diabetogenous obesity readily yields to dietetic treatment. The vigorous enforcement of an absolutely proteid diet is sure to do harm rather than good, besides inflicting a great deal of discomfort on the patient.

THERAPEUTIC HINTS.

Treatment of Hemorrhoids in Women.—For hemorrhoids when they are flabby and indolent, or dry and warty, no treatment is instituted. If they are swollen when examined, the pain can be mitigated and the suffering and itching relieved by rest, a frugal diet, saline purgatives and cold injections, which lessen the constipation. When there is a discharge apply, with the patient in bed, compresses of bran and water, or of a solution of zinc sulphate, of glycerin and tannic acid, or perhaps some ointment of calomel. If the external swellings are inflamed, stay in bed and apply compresses of cold water or an ice-bag. When they discharge and ulcerate and restrict the passage of matters, and the sitting position or walking is painful, the thermocautery heated to a cherry-red gives relief. But care must be taken not to burn all the projections of the anal region for fear lest a slower contraction result. Finally, combat the constipation by the use of ovules of glycerin.—Lutand (*Bul. gen. de Therapeutique*, March 8, 1900).

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MEDICAL NEWS.

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Opium Usurped—From The Antikamnia Chemical Company, 46, Holborn Viaduct, London, have been received samples of its products—five-grain antikamnia, and tablets of this drug combined with codeine. Antikamnia, as its name implies, is an analgesic and anodyne. It has gained much favor in the United States, both for this and for its antipyretic action. A coal-tar preparation from several of the amido derivatives, it has been proved not to depress the heart after the manner of other coal-tar derivatives. Each antikamnia tablet contains five grains of the drug—the usual dose—which can be repeated every fifteen or twenty minutes, until three or four doses have been taken. The antikamnia and codeine tablet consists of four and three-fourths grains of antikamnia and one-fourth grain of codeine, and has been especially brought forward for the treatment of pain where spasm or physical causes of irritation exist, and which is more amenable to it than to the antikamnia alone. Both tablets merit a trial in neuralgia and spasmodic ailments and as their freedom from injurious action upon the heart and circulation is invariable, they will certainly continue to be received by the profession with favor."—*Edinburgh Medical Journal*, March, 1900.

Golden Words—The experience of many of the best men of the medical profession, not only of the United States but in England, has established the clinical value of antikamnia. Among those who have paid high tribute to its value and who occupy positions of great eminence, may be mentioned Dr. J. Acheson Wilkin and Dr. R. J. Blackham, leading medical practitioners of London. They have found it of value in the neuralgias and nervous headaches resulting from overwork and prolonged mental strain, paroxysmal attacks of sciatica, brow-ague, painful menstruation, la grippe and allied conditions. Indeed, the practitioner who has such cases as the latter come under his observation and who attempts their relief by opiates and stronger drugs, when so efficient and harmless an agent can be used, commits a grave error.

Experience goes to prove that two five-grain tablets of antikamnia in an ounce of sherry wine, taken every two to four hours, will carry the patient through these painful periods with great satisfaction.—*Medical Reprints*, London.

Dysmenorrhœa

℞ Five-grain Antikamnia Tablets, - No. xij
Sig: Take two tablets, crushed, at beginning of menses and one every three or four hours until relieved.

Tickling Coughs and Laryngeal Neuroses

℞ Antikamnia and Codeine Tablets, - No. xii
Sig: One every hour, allowing it to dissolve slowly in the mouth and swallowing the saliva.

Applied Therapeutics.

Advantages of Slip Socket in Artificial Legs. Editorially (*The North-western Lancet*) attention is directed to the unequalled merits of the artificial limbs made by the Winkley Artificial Limb Co. The distinctive feature of these limbs is the device known as the slip socket which prevents irritation in walking, facilitates the fitting of a short stump and makes it possible to adjust the artificial limb easily to the changes incidental to growth of the wearer. The surgeon in charge of this line of exhibits at the Chicago World's Fair described the socket as truly admirable and in a personal letter to the maker spoke of the advantages of the device in the strongest possible language. Physician's who have any experience with this socket desire no other artificial limbs.

Treatment of Urinary Affections. Miley (*The Western Medical Journal*) reports that he has treated several hundred cases of genito-urinary disease with sanmetto and considers the remedy almost specific especially in the chronic forms. In the troublesome prostatitis of old men, also in functional weakness of the generative organs, he finds wonderful results follow a course of treatment with sanmetto. It is applicable to nearly all diseases, acute or chronic, of the genito-urinary tract, but yields the best results in subacute and chronic affections.

Systematic Mouth Disinfection as a Prophylatic Measure. In an able editorial (*The Dietetic and Hygienic Gazette, March, 1899*) this important subject is treated in all its phases. It is claimed that if competent persons regularly examined the mouths of all school children, treated or removed all carious or diseased teeth and enforced instructions with regard to the systematic and effective employment of proper antiseptic solutions and tooth brushes the death rate in this country would be materially reduced. Nor would the benefits derived from the employment of such precautionary measures stop here. A stronger and more vigorous race would be another consequence. The mouth is naturally an incubator supplying all the conditions needful for the proliferation of disease producing germs. Such germs easily find access with many others, of a harmless character, and are always a source of danger. Nearly all effective germicides are themselves poisons and consequently are not suited for disinfecting the mouth. But of all recognized antiseptics none is more powerful than hydrogen dioxide and this is at the same time entirely harmless. Its action depends upon the presence of oxygen, the most common element in the body. When applied oxygen, is set free and this at once seeks union with that for which it has the greatest affinity, in the process known as oxidation. In this process all albuminous matter, bacteria and their food products are destroyed. Oakland hydrogen dioxide is chemically pure and therefore the safest and best for mouth disinfection.

Glycero-Phosphates. Quackenbos (*Report, New Hampshire State Medical Society*) observes that chemistry has demonstrated the presence of a phosphorus-bearing substance in the nerve cells. This substance is tehnically known as *lecithin*, and is a constituent of every healthy cell, being especially abundant in the cells of nerve structures proper and the brain. Chemically, this substance is a glycero-phosphate of neurin, neurin being the albuminous basis of all nerve tissue. Life depends on the presence of healthy glycero-phosphate. Neurasthenia is due to a diminished amount or poor quality of this substance. Upon these well established facts is based the treatment of neurasthenia and allied conditions by the systematic administration of glycero-phosphate of lime. In therapeutics this salt is found rapidly to restore the phosphorus eliminated in excess through the urine, and to diminish the excretions of incompletely oxidized phosphorus which is always indicative of pathologic waste. A course of treatment with glycero-phosphate of lime supplies to the system phosphorus in a form ready for absorption and assimilation, thus differing from mineral phosphorus, syrup of hypophosphites and phosphates generally which are not assimilable. It stimulates nutrition, promotes metabolism and facilitates normal tissue metamorphosis. The dose ranges from three to four and one-half grains and should be repeated two to three times a day.

Uric Acid in Disease and Therapeutics. Powell (*The North American Journal of Diagnosis and Practice, March, 1899*) observes that the intimate relationship between psoriasis and gouty affections is attested to by the efficacy of remedies directed to the rectification of the uric acid diathesis. He believes that the latter condition is much more frequently the cause of disease than is recognized or realized. It shows itself often merely in patches of psoriasis along the creases at the side of the nose, and such cases are generally difficult to cure simply because the underlying and obscure diathesis evades recognition. The writer generally resorts to the early use of thialion, a laxative salt of lithia, in all these cases. Rheumatic and gouty affections, lithemia, corpulency, and other allied affections yield more promptly to this remedy than to any other. The medicament is a crystalline salt which dissolves freely only in hot water and therefore should be administered in copious draughts of hot water. The dose is one teaspoonful taken about half hour before each daily meal.

Treatment of Acute Gonorrhea. Fraley (*The Therapeutic Gazette, November, 1899*) details successful treatment of gonorrhea with mercurol as follows: At first one-half per cent. of mercurol in a normal salt solution is employed as an injection. This is equivalent to a 1: 2000 solution of corrosive sublimate, yet causes no inflammatory reaction, this being a capital fact in mercurol treatment. Later the strength of the solution is doubled and continued while local treatment is needed. This strength is always sufficient and is well borne. The patients are instructed to inject every two hours and to hold the solution at least two minutes. Pronounced effect upon the discharge and urinary symptoms follows within forty-eight hours.

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